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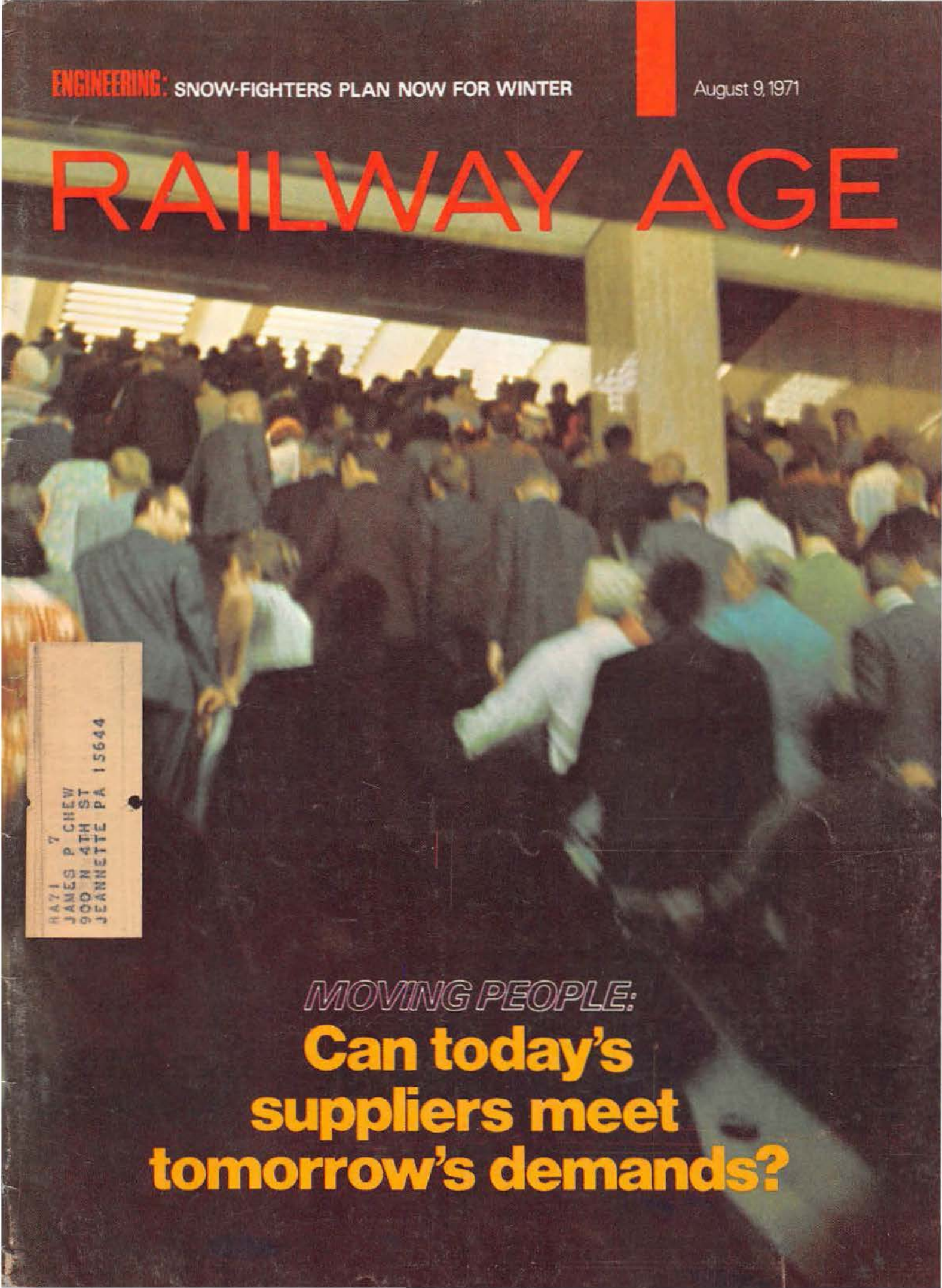
August 9, 1971

RAILWAY AGE



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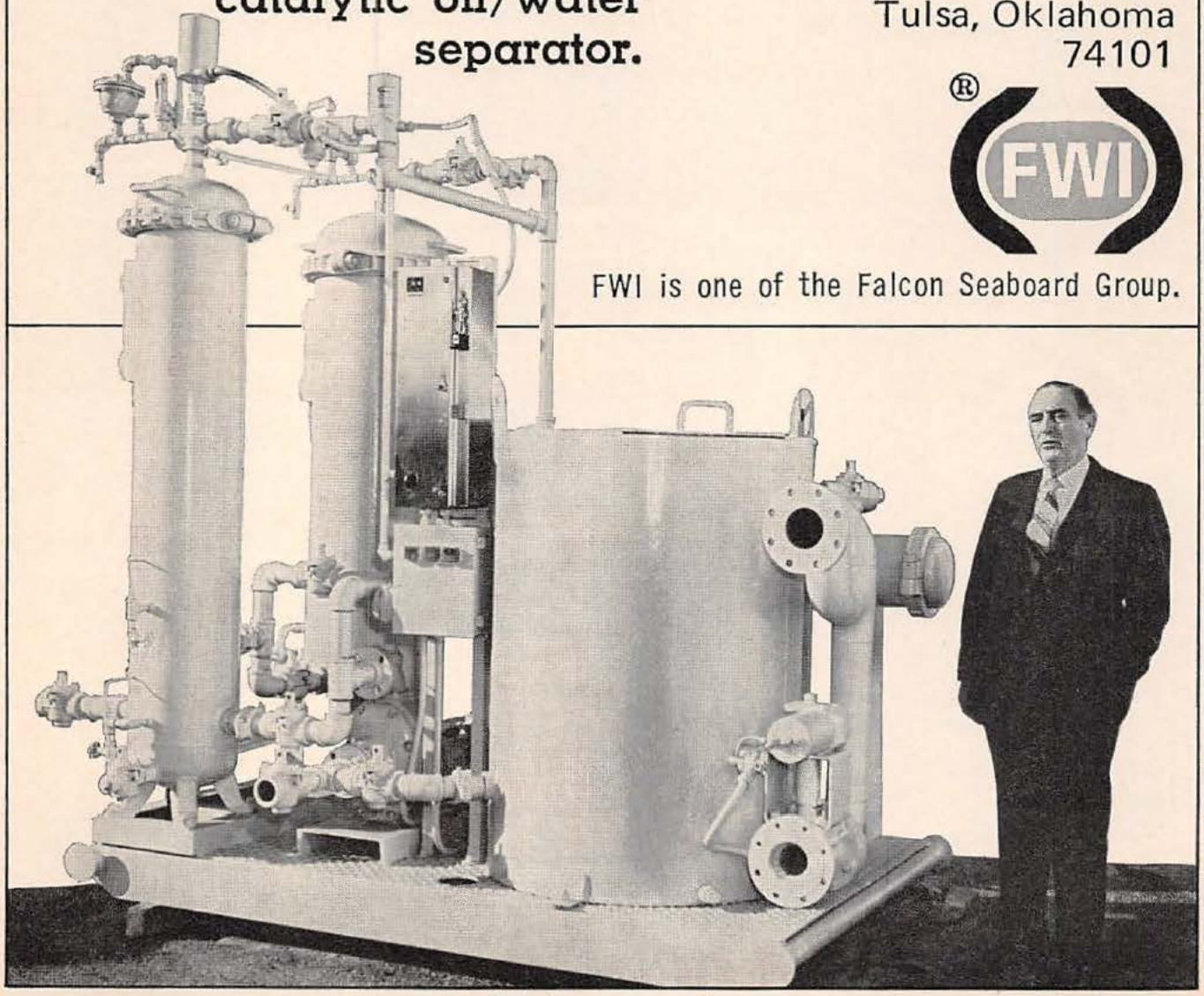

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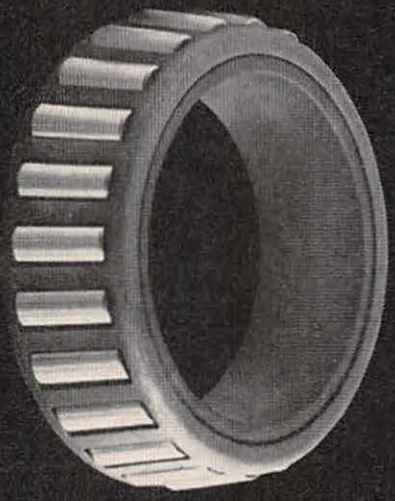

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August 9, 1971 • Vol. 171 No. 3

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Inside

LUTHER MILLER

LINES ON LINES ON LABOR

Gus Welty wrote not one, and not two, but three separate Lines on Labor columns for this issue of Railway Age. The first got as far as the New York copy desk but was outdated before it could get into type. The second died (again: outdated) while it was still being telephoned to New York. The third appears on p. 12, facing the first page of Gus's special report on the various work rules settlements—what they mean, and don't mean. That's how fast the labor news was breaking last week.

When it was all over (at about one minute before absolute deadline), Gus commented wearily, but happily, "I feel like a daily reporter again."

That is the kind of reporting that we have encouraged at Railway Age over the years. On the one hand, we have an obligation to do the kind of in-depth, feature reporting that we have been doing now for nigh onto 115 years (an example of which is described below). But we also feel an obligation to report the news behind the news while it is still news. And that is what Senior Editor Welty has done so ably (again) in this issue.

JOE ASHER RIDES AGAIN

For this week's cover story on the "state of the art" controversy now boiling up in the rail-transit supply industry, we borrowed back Joe Asher. As Railway Age's transit editor for several years (before going to Forbes for a two-year stint), Joe won himself a reputation as a reporter who (in the words of one transit operator, after an Asher inquisition) "never knows when to stop asking questions." To get all sides of an immensely complex story, Joe traveled to Chicago, Boston, Philadelphia and Washington for personal interviews with half a dozen principals in the case, ran up an awesome bill in toll calls interviewing two or three dozen very interested bystanders, and then boiled it all down into the five-page report which begins on page 24.

ARRANGING—AND RE-ARRANGING—THE SCENERY

The toughest thing about the assignment, reports Joe, was that "nearly everyone was carefully arranging the scenery to give his own side of the picture." Re-arranging the scenery so as to give everyone his day in court was a task that kept our ex-transit editor up nights. We think the resulting article is fair to all—but being ourselves members of the establishment (and having been privy for some years to the mysterious ways in which Washington giveth, and Washington taketh away), we may be forgiven the editorial comment that the most telling line in the whole piece may well be Ed Tennyson's summation: "Too many people are in love with innovation for innovation's sake."

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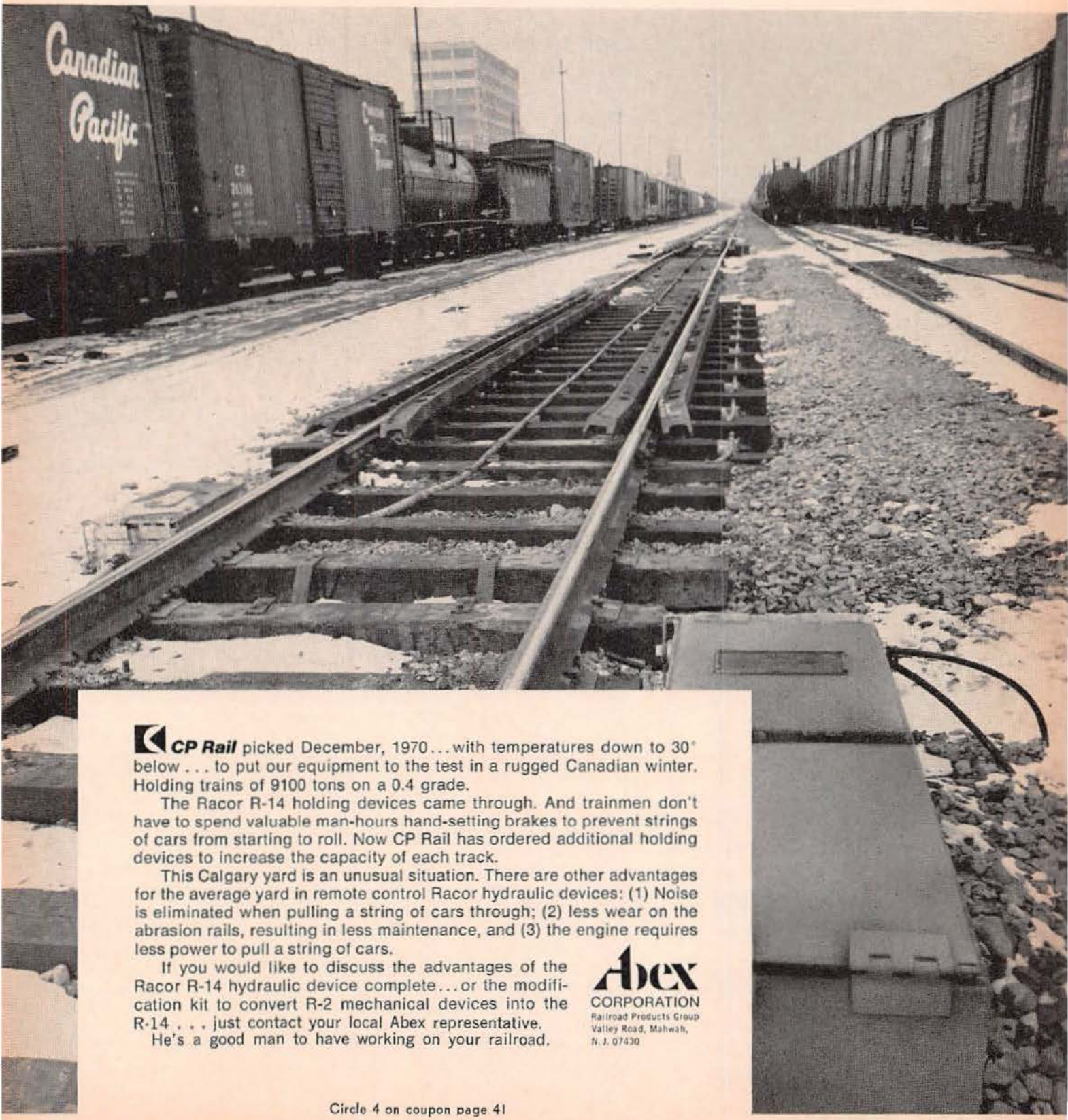

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RAILWAY AGE

August 9, 1971

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COVER

To illustrate the "Moving People" theme of this week's cover story (p. 23), Railway Age Art Director Maurice Mates photographed PATH's new lower-Manhattan terminal during rush hour. The terminal itself is described on p. 31.

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Short and Significant

RAILROADS

CAR ORDERS ARE UP 40%

The total of 30,796 new freight cars ordered during the first six months of 1971 is 40% greater than for the corresponding year-earlier period. Commercial builders got 85% of the 1971 total. Backlog of undelivered cars—27,977 on July 1—was the highest in a year.

N&W CENTRALIZES CONTROL OF TRAINS

All freight trains operating over Norfolk & Western's 8,000-mile system will soon be centrally controlled from the road's System Operations Center (SOC) at Roanoke, Va. SOC now controls motive-power allocation. The new concept, says Leon Atkinson, general manager of transportation, will expand this responsibility to all trains, to the point of determining what trains will be operated, when and with what cars. The aim is to obtain maximum utilization of N&W's 1,600 locomotives and 119,500 freight cars as well as to improve service to shippers.

HELICOPS CURB VANDALISM

Helicopter patrol of railroad facilities in the New York City area by Metropolitan Transportation Authority is paying off. In three months following the launch of pair of MTA 'copters (RA, May 10, p. 13), broken windows on Long Island and Penn Central trains are down 58%. Thieves and arsonists in freight yards are also deterred as the "helicops" swoop down with sirens and loudspeakers operating.

CALIFORNIA SEEKS MORE AMTRAK SERVICE

Senator Alan Cranston (D.-Calif.) has introduced a bill in the Senate (identical to an earlier measure introduced in the House) asking that the Rail Passenger Service Act of 1970 be amended to require reinstatement of service through the San Joaquin Valley, either between Oakland/Barstow or between Sacramento/Barstow. Either route would include Fresno. Cranston said the San Joaquin Valley route "has high potential for integration into an expanded, technologically advanced system" and thus "should remain on the agenda of our publicly sponsored" network.

CAR SUPPLY: ANOTHER STUDY

DOT has awarded a research contract for design of a demurrage system that "could help reduce significantly the overall railroad freight car supply problem." The $185,000 grant went to Robert Reebie Associates; report is to be delivered in March 1972.

TRANSIT

BART: THE LAST RAIL IS LAID

Bay Area Rapid Transit now has 300 miles of steel rail on the ground, providing 150 miles of trackway for the system's 75 route miles. The last mile in the system was completed July 23. Revenue operations are still some months away. "Early in 1972" is the closest BART officials will come to setting a target date for service.

NEW ATLANTA PLAN: 52 MILES OF RAIL

A 70-mile rapid transit system (to include 52.09 miles of rail and 17.6 miles of busways) was recommended by consultants during a series of public hearings held late in July by the Metropolitan Atlanta Rapid Transit Authority (MARTA). The MARTA board will study the recommended plan and citizen reactions before adopting a final plan this week for presentation to voters in a Nov. 9 referendum. The recommended transit program is more extensive than the 40-mile system proposed by MARTA in 1968. About two thirds of the total rail system would be located on existing railroad right-of-way. Seven miles would be subway, 21 miles aerial, and 24 at grade level.

FRENCH FIRMS WINS TACV SUBCONTRACT

The Rohr Corp., under contract to DOT for construction of a 60-passenger 150-mph tracked air cushion vehicle (TACV), has awarded a $250,000 contract to Le Moteur Lineaire (LML) of Grenoble, France, for engineering design of the vehicle's electrical propulsion system. LML provided the motors for France's Aerotrain and will supply the linear induction motors for a magnetic suspension vehicle being built for West Germany.

CONGRESS AGREES ON HIGHER UMTA BUDGET

Senate and House conferees on DOT's budget last week agreed on a limit of $900 million for the Urban Mass Transportation Administration's obligational authority in fiscal 1972, $300 million more than President Nixon's 1972 budget calls for.

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RAILWAY AGE

NEWS

Earnings: Some roads buck the trend

For the railroad industry as a whole, the first half of 1970 was another period of low earnings. When the AAR's estimates are complete, close to two dozen railroads are expected to show red figures.

But for the traditionally healthier roads, the first half was a comparatively good one, due to rate increases and tight control over expenses.

A sampling of individual-road statements:

Net income of the Southern System increased by 21.1% in the second quarter (to $18.6 million) and by 33% (to $36.8 million) in the first half. Southern's freight revenues rose by 15% in the first half. President W. Graham Claytor, Jr., attributed two-thirds of the increased revenue to increased rates, the remainder to slightly higher volume and "an improvement in traffic mix."

Norfolk & Western reported second quarter net income of $24.3 million, compared with $19.3 million for the 1970 period; and six-months' net income of $45.4 million, up from $33.7 million in the 1970 period. Operating revenues in this year's first half were $399.1 million, up from $361.7 million a year ago.

The N&W System (including Dereco, Inc., and its subsidiaries, Erie Lackawanna and Delaware & Hudson) reported a consolidated net income for the first quarter of $28 million, compared with $22.5 million in 1970; and consolidated net for the first half of $48 million, compared with $30.8 million a year ago.

Union Pacific Corp. increased its net income for the second quarter to $22.4 million, up 16.3% from 1970; and its first-half earnings to $40.7 million, up 20.9%. UP Chairman Frank Barnett said increases in freight rates as well as savings effected through stringent cost reduction programs helped to moderate the effects of wage and price increases during the first half.

IC Industries had second-quarter net income of $12,180,000, compared with $12,125,000 in 1970; and first-half net of $21,234,000, a record, compared with $20,906,000 last year. Chairman W. B. Johnson called the results "excellent" and said they were due primarily to "the improved situation of the railroad and to stronger real estate earnings than anticipated." He cited a more profitable traffic mix and improved cost controls as contributing factors, as well as higher freight rates.

Northwest Industries, Inc., reported consolidated net earnings of $13,671,000 in the second quarter, compared to $10,633,000 a year ago; and a first-half net of $21,153,000, compared with $16,369,000 in 1970. President Ben Heineman commented that "second quarter and first six months' net sales and earnings before extraordinary items established records."

Santa Fe Industries posted a second-quarter net of $14 million, up 36.6% from the 1970 period; and first-half earnings of $26.5 million, compared with $23.7 million a year ago.

Burlington Northern's consolidated second-quarter net income was $10.9 million, compared with $4.3 million in 1970; first-half net was $12.6 million, compared with $3.7 million for the first half of '70. President Louis W. Menk noted that substantial revenue gains had come from increased unit-train movement of low-sulphur coal from mines in Wyoming and Montana to Midwest utility firms, increased shipments of imported autos through Pacific Northwest ports, gains in forest and lumber products shipments, and strong movement of grain and other food products.

For this year's first six months, Rio Grande Industries reported net income of $6,246,000, compared with $5,259,000 in the 1970 period.

Frisco reported second-quarter net of $4,004,198, compared with $3,680,221 a year ago; and first-half net of $7,334,332, up from $6,793,215 last year. President R. C. Grayson said first-half earnings were the highest for that period in the company's history.

Maine Central had net income of $722,171 in the second quarter, compared with a deficit of $369,193 in the 1970 period. MC's first-half net was $1,028,041, as against a deficit of $340,489 in 1970. MC President E. Spencer Miller commented: "Although we are still not completely out of the woods, everything points to an encouraging future. Maine Central is one of the very few railroads in the Northeast that has been able to reverse a serious financial condition."

Western Maryland was among those roads reporting a downturn in earnings. WM's net for second-quarter 1970 was $679,000, compared with $1,350,000 in 1970. For the first six months, WM earned $1,136,000, down from $2,271,000 in the correspomding 1970 period.

The Rock Island and the Milwaukee Road were among those still in the red—but both were able to cut their losses.

Penn Central trims its losses

Penn Central reported a net loss of $127,962,794 for the first half of 1971, an improvement of $21,542,737 compared with the loss of $149,405,531 in the corresponding period of 1970. For the month of June, PC trimmed its losses to $1,835,384, on a fully accrued basis. This compared with a loss of $43,384,014 in June, 1970 (which included an extraordinary charge of $17 million for impairment of investment in the Lehigh Valley). In a statement accompanying the financial report, the trustees commented: "Larger cash receipts than anticipated for both May and June improve slightly the company's projection of results for the remainder of the year. In the absence of a steel strike or a widespread railrod shutdown, or another such major adverse development, Penn Central should be able to continue operations throughout 1971 although the cash situation in November and December promises to be tight."

PC's operating ratio dropped to 79.16% in June, lowest since March 1969. The operating ratio in June 1970 was 90.57%.

Amtrak operation of intercity passenger service benefitted the railroad by approximately $4 million in June and $7.9 million for the six-month period, the trustees said.

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Transportation Act of '71 goes in

Sen. Vance Hartke (D-Ind.), chairman of the Senate Surface Transportation Subcommittee, on July 29 introduced a bill (S. 2362) entitled the Surface Transportation Act of 1971 which embodies the historic agreement among domestic surface modes on common legislative goals (RA, July 12, p. 22).

Simultaneously, Rep. Brock Adams, member of the House Transportation Subcommittee introduced an identical bill (H.R. 10146) in the House.

The proposal represents the joint program of the AAR, the American Trucking Associations, and the Water Transport Association. Said Hartke:

"I have been saying for months that the transportation industry is its own worst enemy.

"Now (the carriers) have done what I asked them to do. . . . It is late, it is certainly not perfect . . . but this proposal is in the right direction; it gives us a place to start."

The measure, on which Sen. Hartke promised hearings soon after Labor Day, contains these seven titles:

—Title I: a $5 billion loan and loan guarantee agency, similar to the old RFC, from which one company could receive up to $750 million.

—Title II: requires ICC to develop criteria for assessing revenue needs of carriers, including costs to them of equipment replacement and long-term capital. Establishes machinery for speedier rate adjustments based on such costs. Forbids taxation of transportation company real property at values higher than other real property in the same taxing jurisdiction.

—Title III: requires the filing of rates on exempt bulk commodities by water carriers and repeals the present exemption from regulation of certain agricultural commodities. (Said Sen. Hartke: "This section is bound to be the most controversial in the entire bill, and my introduction of it . . . does not indicate a prejudgment on my part.") Also directs ICC to establish criteria and rules for more expeditious handling of rail abandonments.

—Title IV: requires that 5% of Federal funds given to states for highways be spent on rail-highway grade crossings, instead of the present law which permits, but does not require, such expenditure. Also permits DOT to up the percentage to 10% in states where deemed necessary.

—Title V: restores the investment tax credit at a rate of 10% for the first two years and 8% thereafter. This is well above the 7% credit, repealed in 1969. Also extends the 5-year amortization rule on equipment now enjoyed by rails to other modes, and abolishes the penalty tax on the rule.

—Title VI: authorizes ICC to submit its budget directly to Congress, bypassing the White House.

—Title VII: sets effective date of the bill's provisions on its date of enactment.

As Congress prepared for its Aug. 6 recess, DOT had still failed to produce its own transportation legislative package. DOT Under Secretary James A. Beggs said introduction could come "in the next few weeks." There are, he said, a number of unresolved problems and "we are still working hard."

One holdup, reportedly, was at the Department of Commerce, where Secretary Maurice Stans seemed sympathetic to shipper complaints over the administration's coolness to two key sections of the package. These sections, said to be under reconsideration at the request of railroads and motor carriers, were a proposal to ease restrictions on entry into trucking, and to eliminate the antitrust exemption of rail and motor carrier rate bureaus.

The shippers made their views known at a White House meeting July 20 with Presidential Special Assistant Peter Flanigan. They included James V. Springrose, transportation vice president of Cargill, Inc., and representatives of Ford Motor Co., Sears Roebuck, Dow Chemical, National Biscuit, General Mills, Louis Dreyfus Corp., Bowater Paper, American Smelting & Refining Co., American Paper Institute, and the National Council of Farmer Cooperatives.

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W. H. Thompson
President

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Lines on Labor

GUS WELTY

COSTLY—BUT AN AGREEMENT

In its infinite and incontrovertible wisdom, time will prove whether the confrontation between the nation's railroads and the United Transportation Union produced a breakthrough—or just another agreement of less than monumental proportions. The railroads did indeed win work-rules concessions—as did Chicago & North Western in the agreement it negotiated separately. In key instances, provision for finality has been included, so that negotiations—on interdivisional runs, for instance—cannot drag on without an end. But the package will be an expensively-purchased one. The wage increases follow the 42%-for-42-months pattern. And the protective benefits for employees adversely affected look generous.

THE ATMOSPHERE WAS UNREAL

In the whole affair—looking back, now—there was a kind of "last-hurrah" atmosphere. At the outset UTU's strike action was upstaged by President Nixon's "I will go to China" speech. At the conclusion, the rail settlement played second to the steel settlement, pulled off without a strike.

At a couple of points, during the last week in July, it did seem that agreement was about to come. But it didn't. And then UTU President Charles Luna did what those who know him knew he would eventually do: before a reasonably good forum—a network television audience—Luna proposed publicly (as he reportedly had privately) that he and three railroad presidents be locked in a room, there to get things thrashed out. It was vintage Luna—a so-typical suggestion from a man who takes no little pride in his direct dealings with the industry's chief executives.

And when settlement was finally announced, of course, it was presented as an outcome of direct talks involving Luna, Southern Pacific's Ben Biaggini, Penn Central's Bill Moore, and Southern's Graham Claytor. Luna had his summit-settlement, with which to make—presumably—his final appearance before a UTU convention as president. At the same time, you had to wonder at the facts running through the minds of the men—on both sides—who had diligently served as members of negotiating committees.

THEN, HOW ABOUT C&NW?

In retrospect, perhaps a word ought also to be said about North Western's individual agreement. According to popular story, C&NW—on the point, with Southern and Union Pacific—pulled away from national bargaining because it couldn't stand a strike, at least one of any duration. C&NW people say popular story is more fiction than fact. On C&NW's behalf, consider instead (1) a conviction that rules promulgation would not work as a long counter-weapon to selective strikes; (2) a belief that these were not the issues on which to wage war but rather issues on which a negotiated settlement should be made; and (3) a protest against a decision-switch in which the industry, ultimately, decided to forego a walkout, leaving point-roads defenseless in their own house.

Or to sum up the whole eighteen days of hassling: Past is past, done is done—and it's the future that counts.

THE AGREEMENT: What it does (and doesn't) say

Perhaps the best clue to the real meaning of the railroads' national wage/rules settlement with the United Transportation Union lies in the fact that both sides were calling attention to their concessions as well as to their gains. This was not a winner-take-all agreement, nor was it one in which all issues were resolved. For the carriers, it will be expensive, in terms of wage increases and protective provisions. But work-rules relief was badly needed, as AAR President Stephen Ailes pointed out, and work-rules relief was obtained.

Pending the required ratification by UTU general chairmen, specific terms were not officially released. On wages, however, this settlement followed the general lines of prior agreements with other operating and non-op unions—42% (compounded) over a 42-month period dating back to Jan. 1, 1970. On rules, the pact hewed reasonably close to the line established last November by Emergency Board 178—a line which served as a basis for subsequent negotiated agreements between the carriers and the Brotherhood of Locomotive Engineers, and between Chicago & North Western and UTU. These are among the key points covered in the UTU national agreement:

— Railroads won relief on interchange rules, to the extent that (1) road crews may be required to receive solid trains from a connecting line or to deliver solid trains to a connection, at points where yard crews are employed; (2) at interchange points, carriers may specify additional interchange tracks as deemed necessary; (3) carriers will not have to fill any one interchange track before additional tracks are used, provided that the total number used will be minimum; and (4) crews used in interchange may be required to handle cars to and from a connecting line rather than running light in one direction.

— Use of radio may be required. Existing radio arbitraries are to be eliminated Jan. 1, 1973. On the same date, basic daily rates of ground-service employees without a mileage component will go up by $1 per basic day.

— Without additional pay and without penalty pay to hostlers or yard crews, road crews may be required to (1) pick up and set out cars at more than one point in the initial and final terminals, respectively; (2) pick up and/or set out at intermediate points; (3) set out bad-order cars; (4) pick up and set out cars of their trains to the minimum number of tracks capable of handling the cars; and (5) handle engines to and from their train and the ready track and engine house.

— On interdivisional runs, two procedures will be available, depending on whether the proposed run does or does not operate through a home terminal. In the former instance, there is provision for final determination by a three-member task force (including a neutral) if the parties are initially unable to agree. In the latter instance, there is provision for negotiation by a two-member railroad/union task force, for operation of the run on a test basis, and if necessary for final determination through arbitration under the Railway Labor Act. In both cases, there is a fixed timetable, calling for decision no more than 180 days after the carrier files its notice of intent.

— Railroads also won relief on switching-limit restrictions for which Emergency Board 178 had found "no valid reason."

Other contract changes include 1973 provision of a fifth week of vacation after 25 years' service, and of a ninth paid holiday. There is also an increase from $1.50 to $2.00 in the away-from-home meal allowance, with an additional $2.00 to be paid if the employee is held an additional eight hours (total of 12). Time claims arising from rules promulgation are to be handled under normal procedures.

> Work-rules relief was obtained—but it did not come cheap.

Importantly, the agreement provides for creation of a "standing committee" to deal with such unresolved issues as basis of pay, elimination of arbitraries, mileage holddowns, car-scale additives and various road/yard proposals.

The agreement becomes effective when ratified. It includes a moratorium, lasting until July 1, 1973, and covering all items settled or referred to the standing committee.

Agreement-in-principle on protective benefits makes use of both Amtrak provisions and Washington Job Protection Agreement provisions, amended. As one example, employees adversely affected under the interdivisional-run rule are to receive protection as provided by the Amtrak agreement, modified to make the protective period equal to the employee's seniority (though it is not to extend beyond the employee's 65th birthday).

With the Aug. 2 national settlement, there were inevitable comparisons between it and the separate agreement made July 22 by C&NW and the union. Also inevitably, pro and con points could be found—between the more general terminology of an all-encompassing national pact and the specific language of an individual settlement which was tailored to pre-existing conditions on a single carrier. (Few, if any, major labor agreements in recent years have created the broad interest of those recently made with the operating unions. For that reason, Railway Age is publishing, on the following pages, comparisons made by C&NW between Board 178, the BLE agreement and the C&NW/UTU pact. Similar point-by-point outline of the national agreement is scheduled for publication Aug. 30.)

Agreement with UTU at the national level did not come easy. By the time it was reached the UTU's selective strikes had extended to 10 roads—including Southern, Union Pacific, Southern Pacific, Norfolk & Western and Santa Fe. Eight more roads had been served notice of impending walkouts.

In the end, settlement was announced after so-called summit sessions involving UTU President Charles Luna and three rail chief executives—Benjamin F. Biaggini of Southern Pacific, William H. Moore of Penn Central, and W. Graham Claytor, Jr., of Southern.

In a sense, the whole dispute had its roots buried deep in 1959 when the industry launched its far-reaching campaign to modernize work rules. The July confrontation, as a separate thing, dated back to the May-November period of 1969, when new union proposals and railroad counter proposals were served.

Brief strikes occurred last September; then a five-member emergency board heard cases involving four unions, including UTU. Rejecting the board's report, the organizations began a nationwide strike last Dec. 10. Almost immediately Congress passed back-to-work legislation which included 1970 wage increases but no rules relief. Three unions subsequently settled.

Litigation followed, after UTU was said to be readying a selective-strike plan. Railroads won their point in Federal District Court, lost it in the appellate court—and finally the U.S. Supreme Court, in effect, upheld the validity of the selective strike in pursuit of a national agreement, by refusing to review the appellate-court decision.

COMPARISONS BETWEEN RECOMMENDATIONS OF EMERGENCY BOARD 178, BLE NATIONAL AGREEMENT AND NORTH WESTERN-UTU AGREEMENT

EMERGENCY BOARD RECOMMENDATIONS	NATIONAL ENGINEERS AGREEMENT—BLE	NORTH WESTERN AGREEMENT—UTU
	I WAGES AND FRINGES	
1. WAGES 37% over 42 months 42% compounded	**1. WAGES** 37% over 42 months 42% compounded + 67¢ per day inequity or equalization adjustment to yard engineers. BLE 1969 National Wage Agreement granted yard and road engineers 72¢ and 53¢ per day special adjustment respectively 7/1/69. So-called radio adjustment. Will be close to $1.00 by January 1, 1973.	**1. WAGES** 37% over 42 months 42% compounded + 54¢ per day equalization adjustment to road firemen + $1.00 per day special adjustment to yard and local freight (under 100 miles) trainmen. Effective Jan. 1, 1973. So-called radio adjustment.
2. VACATIONS No improvements	**2. VACATIONS** 5th week after 25 years. Military service credits. (Note: NON-OP agreements with Clerks and M of W set the pattern by improving on E.B. Report recommendations)	**2. VACATIONS** 5th week after 25 years. Military service credits
3. HOLIDAYS No improvements	**3. HOLIDAYS** Granted 9th paid Holiday. (Note: NON-OP agreements with Clerks and M of W set the pattern improving E.B. recommendations.	**3. HOLIDAYS** Granted 9th paid Holiday
4. COVERAGE OF BACK PAY ADJUSTMENTS No recommendation	**4. COVERAGE OF BACK PAY ADJUSTMENTS** Voluntary quits will not receive retroactive pay.	**4. COVERAGE OF BACK PAY ADJUSTMENTS** Voluntary quits will not receive retroactive pay.
5. JURY SERVICE No recommendation	**5. JURY SERVICE** Pay for actual time lost with a maximum of 60 days pay at the basic daily rate. (Note: NON-OP agreements with Clerks and M of W set the pattern.	**5. JURY SERVICE** Pay for actual time lost with a maximum of 60 days pay at the basic daily rate.
	II RULES	
1. SWITCHING SERVICE Right to use yard crews to switch pre-existing industries between new industries and switching limits within a 4 mile radius of limits.	**1. SWITCHING SERVICE** Same as Emergency Board Recommendations	**1. SWITCHING SERVICE** Same as Emergency Board Recommendations
2. INTERCHANGE SERVICE **a.** Permit road crews to handle pre-blocked road trains thru terminals to foreign roads. **b.** Right to use tracks adjacent to interchange tracks at interchange points. **c.** Right to use all interchange tracks rather, than have to fill first track to capacity. **d.** Right to handle interchange traffic in both directions by yard crews.	**2. INTERCHANGE SERVICE** Same as Emergency Board Recommendations	**2. INTERCHANGE SERVICE** Same as Emergency Board Recommendations with the exception of dropping **a.**

EMERGENCY BOARD	NATIONAL ENGINEERS	NORTH WESTERN—UTU
3. ROAD/YARD MOVES **a.** Set out bad order cars with road crews. **b.** Pick up and set out cars in all yards in a terminal. **c.** Handle engines and cabooses of own trains. **d.** Exchange engines and cabooses of own trains. **e.** Pick up and set out cars of own train from or to minimum number tracks.	**3. ROAD/YARD MOVES** Same as Emergency Board Recommendations	**3. ROAD/YARD MOVES** Same as Emergency Board recommendations (note: CNW had right to do **b, c** and **e** prior to agreement, therefore only **a** and **d** appear in the agreement).
4. MERGER OF SENIORITY Merge road and yard seniority rosters.	**4. MERGER OF SENIORITY** Not in Engineers agreement—Rosters already merged by long standing agreements.	**4. MERGER OF SENIORITY** Not in CNW agreement—Rosters already merged by CGW merger agreements.
5. USE OF RADIO **a.** Carriers should get rule permitting them to require use of radio conditioned on negotiating rule on size and weight. **b.** Radio arbitraries in effect gradually eliminated.	**5. USE OF RADIO** 1969 agreement gave carriers radio rule that gave local committees option on keeping radio arbitraries.	**5. USE OF RADIO** Same as Emergency Board Report. (Note: CNW has no radio arbitraries)
6. INTERDIVISIONAL RUNS Grant carriers right to institute interdivisional runs which are reasonable in regard to miles run, the hours worked, and other conditions of the assignment. Right to take to arbitration any matter pertaining to conditions of the assignments.	**6. INTERDIVISIONAL RUNS** Carrier may serve 30 day notice. Parties negotiate on conditions. Such conditions must include: **a)** Runs shall be adequate for efficient operation and reasonable in regard to miles run, hours on duty and in regard to other conditions of work. **b)** Miles over 100 miles shall be paid for at first 100 miles rate. **c)** Transportation when relieved from duty at other than on and off duty points. **d)** A second meal allowance when held 12 hours at away from home terminal. Differences may be submitted to arbitration 60 days after serving of notice.	**6. INTERDIVISIONAL RUNS** Carrier may serve 30 day notice. Local task force has 30 days to agree on conditions which will apply to 60 day test period of actual operation, followed by 30 days to agree on final terms. If fail to agree, submitted to VP-CNW, VP-UTU for settlement and then to arbitration if necessary. Entire procedure can run 180 days but runs operate after first 30 days. Conditions must include: **a)** Not run thru home terminals. **b)** Runs will be regularly assigned. **c)** Miles over 100 miles will be paid for at first 100 mile rate. **d)** Transportation when relieved at off duty point. **e)** Single occupancy dwelling at away from home terminal. **f)** Second meal allowance when held 12 hours away from home.
7. EMPLOYE PROTECTION Parties negotiate and establish reasonable and adequate protective benefits for employes who may be adversely affected by rules changes.	**7. EMPLOYE PROTECTION** **a.** Employes adversely affected by interchange and road-yard rules receive protection of Para. 7 (a) of Washington Job Agreement increased from 60% to 100% for 5 years. **b.** Employes adversely affected by interdivisional run rule receive protection of Para. 6, 7, 8, 9, 10 and 11 of Washington Job Agreement with Para. 7 (a) increased from 60% to 100% and the transfer allowance increased to $400 and 5 working days from 2 working days.	**7. EMPLOYE PROTECTION** **a.** Employes who are not protected under CGW merger agreement and who are adversely affected by interdivisional run rule are protected as follows: **1.** Hired after 12/20/68 but before 6/30/70 shall receive monthly earnings guarantee computed in accordance with merger agreement. **2.** Hired after 6/30/70 shall receive protection of Para. 7 (a) of Washington Agreement raised from 60% to 100% for 5 years. **b.** Employes who are not protected under CGW merger agreement and who are adversely affected by interchange or road-yard rules

EMERGENCY BOARD	NATIONAL ENGINEERS	NORTH WESTERN—UTU
		Washington Job Agreement in- are protected under Para 7(a) of creased from 60% to 100% for 5 years. (Note: CNW operating employes receive merger protective guarantees by merger protective agreements signed with UTU on Dec. 20, 1968. Employes hired since that date are non-protected except by the terms of this agreement.
8. EXPENSES AWAY FROM HOME Stated that some expansion in this area is in order, however, time did not permit Board to deal with this issue in depth and referred it to Standing Committee—Did not foreclose negotiations on the issue, however, as part of conferences on inter-divisional runs.	**8. EXPENSES AWAY FROM HOME** As a condition in establishing inter-divisional runs engineers granted second meal period after 12 hours at away from home terminal.	**8. EXPENSES AWAY FROM HOME** Same as Engineers' Agreement but also raised single away from home meal allowance from $1.50 to $2.00 per meal effective January 1, 1972. (Note: Meal allowance had not been changed since originally agreed to in June, 1964 House Settlement.)
9. STANDING COMMITTEE Recommended that rules changes in the areas of basis of pay, elimination of arbitraries, Hostler assignments, road-yard modifications not covered by agreement, graduated rates, mileage hold down, be referred for handling to a permanent Standing Committee which should not have have arbitrable authority.	**9. STANDING COMMITTEE** Basically the same as Emergency Board Report with differences caused by dissimilar initial demands.	**9. STANDING COMMITTEE** Basically the same as Emergency Board Report but contingent upon industry wide Standing Committee being formed.
10. MORATORIUM General recommendaton denying the carriers request for a broad moratorium covering virtualy everything. Moratorium should go only to the national items disposed of by this agreement.	**10. MORATORIUM** **a.** Bars notices prior to January 1, 1973, not to become effective before July 1, 1973, of specific items covered by agreement. **b.** Permits notices during the moratorium on training of engineers and health and welfare. **c.** Notices may be served and progressed up to point of strike on any subjects not dealt with in preceding two paragraphs.	**10. MORATORIUM** **a.** Bars notices prior to January 1, 1973 not to become effective before July 1, 1973 of listed items as follows: **1.** Wage Increases. **2.** Yardmasters. **3.** Vacations. **4.** Holidays. **5.** Jury Service. **6.** Switching Service for New and Other Industries. **7.** Interchange Service. **8.** Road/Yard Movements. **9.** Use of Radio/Telephone. **10.** Interdivisional Runs. **11.** Employee Protection. **12.** Expenses Away From Home. **13.** Holiday Pay for Road Employees. **b.** Permits notices during the moratorium on items referred to Standing Committee for study.
11. HOLIDAY PAY FOR ROADMEN Stated it is a ramification of the dual basis of pay and recommended against.	**11. HOLIDAY PAY FOR ROADMEN** Not in agreement.	**11. HOLIDAY PAY FOR ROADMEN** Letter of Understanding that CNW will be governed by national disposition whatever it may be.

MORE NEWS ON PAGE 44B

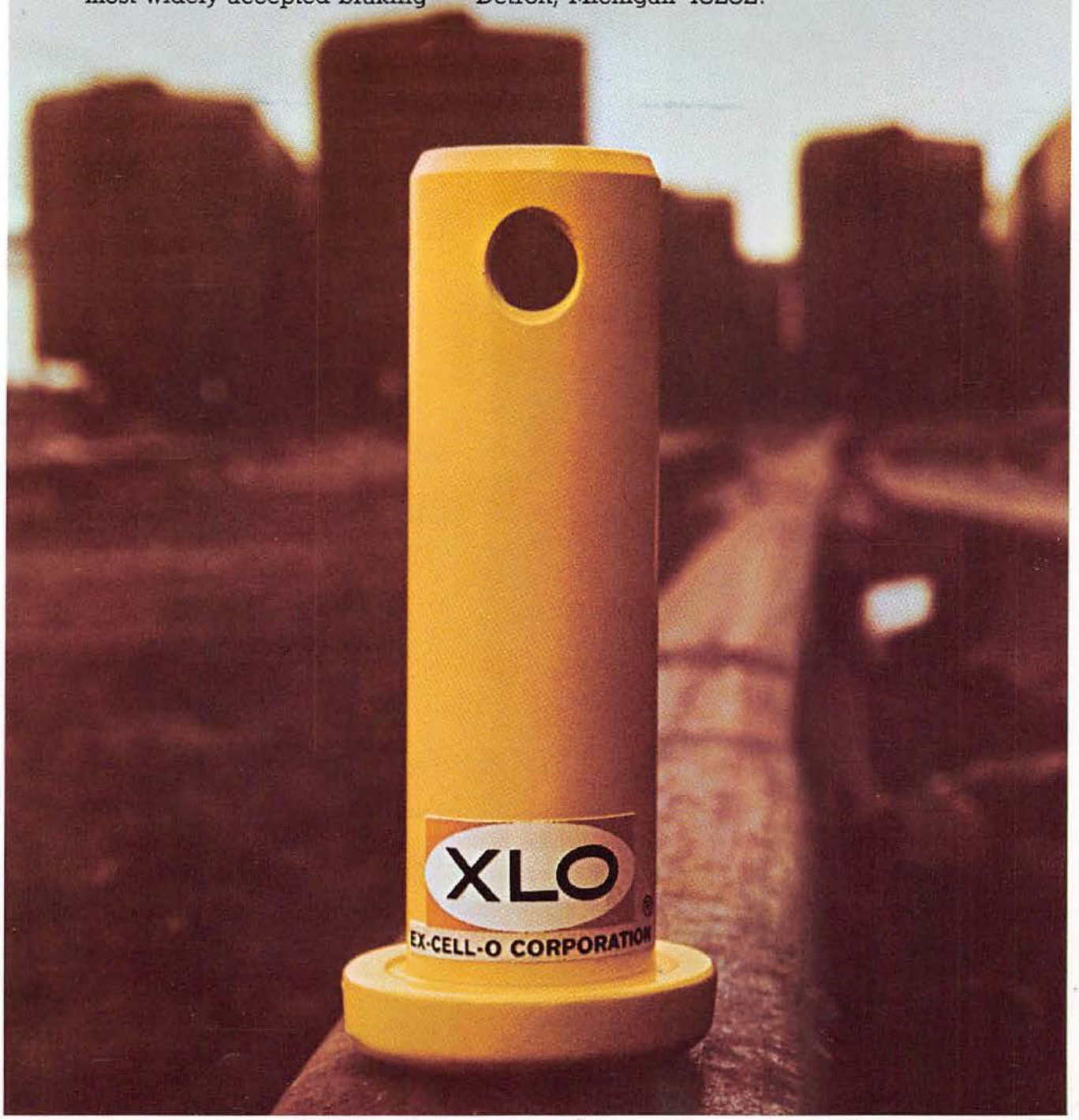
Ask WABCO about Ex-Cell-O's track record.

Westinghouse Air Brake Division demands a lot of itself. And consequently delivers a lot to its customers. Brakes that stop today's high-speed, high-mileage freight cars faster and more economically.

As a result, the WABCOPAC brake assembly is one of the most widely accepted braking systems in the industry.

One of the ways WABCO stays on top is with Ex-Cell-O F Series Pins—the toughest you can buy. Pins that roll hundreds of thousands of proven maintenance-free miles.

Like to hear more? Write Railway Products, Ex-Cell-O Corporation, Box 386, Detroit, Michigan 48232.



Center plates pass

grinding 17-month test.

No major wear spots or galling showed up on plate maintained with Shell Center Plate Lubricant (see right). Railroads are saving thousands of man-hours and dollars with this unique product.

When the center plate on the right was photographed, it had just completed 17 months on the job for a major road. It was cleaned with an air blower; swabbed with solvent. Look at it! Smooth. No galling. Only minor evidence of wear.

After 17 months of horseshoe bends and S curves; after 68 weeks of rocking and swiveling under loads up to 110 tons, this is really something! Yet, it's typical. We spot-checked the plates of many of the thousands of cars maintained with Shell Center Plate Lubricant and the story was basically the same—effective, long-run lubrication.

Material Savings—Improved Operations

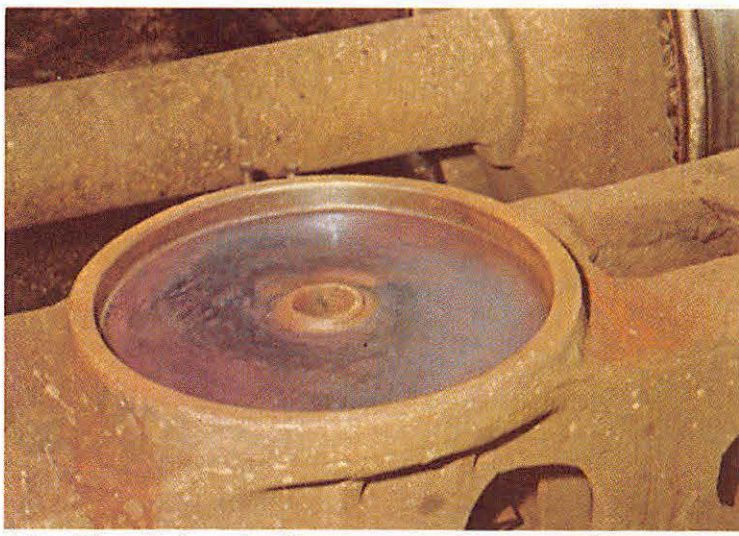
Effective, reliable lubrication is only one of the reasons why so many roads are switching to this Shell product. Material costs are significantly lower because you don't use as much of the Shell lubricant as you do grease or loose pellets. But the greatest saving is keeping expensive, revenue-producing equipment operational. Think about that.

When a center plate is balky, the wheel flanges tend to climb the rail when rounding a curve. In extreme cases, this can cause derailing. Shell Center Plate Lubricant helps protect against this hazard and keep trucks moving freely. This, in turn, reduces wear on the wheel flanges and rail sides. Result: wheels and rails last longer.

You really ought to think about these discs for center plate lubrication. They're clean. Easy to apply, even in freezing weather. Car men are sure to use them because they're so much simpler to apply and accurate to measure than grease or loose pellets. One man can service 20 to 30 cars from a single pail of Shell discs. The cumulative savings in time and manpower could be important for you.

Only seconds are needed to position Shell discs. No mess, no guessing about the proper amount to apply. One man carrying a 15-lb. pail of about 240 Shell discs can lubricate 20-30 cars quickly.

◀ Keeping expensive, revenue-producing equipment operational is a major reason why more center plates are being lubricated with unique Shell Center Plate discs. They help keep trucks moving freely, help reduce wear on wheel flanges and rail sides.



After 17 months' service, there are no major wear spots or galling on this 100 ton coal car center plate lubricated with Shell Center Plate Lubricant. Note how the dark gray component of the lubricant has made a tightly-adhering coating on the metal. Note also how clean the flange has remained for 17 months.

Partner in Savings—Shell TORNUS® Oil

TORNUS Oil is another Shell product that is helping keep maintenance costs low on the EMD and GE locomotives of many roads today. This high-performance oil keeps soot and carbon particles in suspension, keeps engines clean and working efficiently. TORNUS was employed over 660 million miles ago by 18 leading roads, and has helped over 2,000 EMD diesels run smoothly.

Your Shell Representative is the man to see.

He can tell you about Shell Center Plate Lubricant and TORNUS Oil in detail—how they are used, how they can help cut costs for you. Call him today. Stamford, Ct., (203) 327-3600; Baltimore, Md., (301) 821-5905; Chicago, Ill., (312) 341-3275; New Orleans, La., (504) 288-7511; Menlo Park, Calif., (415) 325-0721. Shell Commercial Marketing, One Shell Plaza, Houston, Texas 77002.

Shell Tornus® Oil
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Every ACF Center Flow car provides the utmost in sanitation. Because we know even a little residue can contaminate an entire shipment.

Center Flow's clean-bore design eliminates the center sill as well as ledges and corners that cause hang-up. And thereby prevents contamination from residue.

Of course, plastics aren't the whole Center Flow story. In fact, with over 2000 possible design combinations, there is hardly a dry bulk lading the car can't carry.

And carry more of. Because its unique pear-shaped interior makes fuller use of cube. And with models from 2970 to 5700 cubic feet to choose from, you can maximize payload on products of any density.

Center Flow handles easier, too. With a variety of center-line hatches and outlets that simplify loading and unloading.

ACF's Center Flow car. The cleaner, simpler, faster, more versatile way to ship dry bulk.

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You get a real break on price and before long it breaks down.

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We're not about to abandon our record performance (over 16 years of dependable service) merely to set a new record in sales.

We're going to keep on making our bearings the best we know how, no matter what the price.

Because we know in the long run, that's the lowest price of all.

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Each nickel stainless steel car for the history-making new Philadelphia-Lindenwold Line cost PATCO $200,000. But in the long run, buying cars of this superior transit car material should prove to be a genuine bargain.

The Lindenwold Line is truly a showpiece of modern mass transportation in every respect.

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And it has already converted over 6,000 daily motorists to a clean, comfortable, traffic-free ride in attractive stainless steel cars.

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Because they're lighter than cars of standard materials, they require less electricity for propulsion. So PATCO will actually save money on power.

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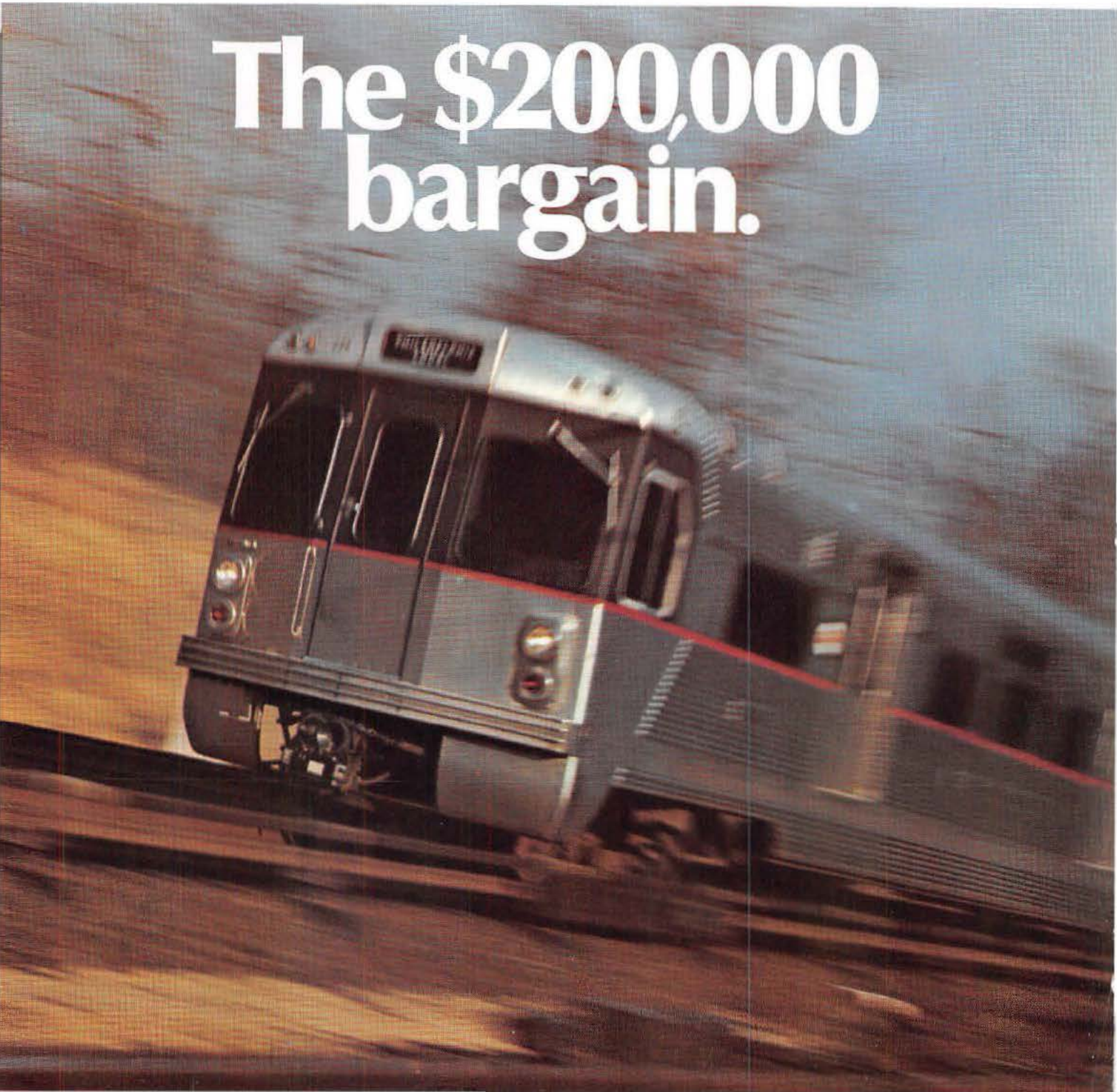


MOVING PEOPLE

Suppliers will exhibit at Pittsburgh parley

The 1,400 transit planners, operators and suppliers expected to attend Pittsburgh's Fifth International Conference on Urban Transportation Sept. 8-10 will be treated to a variety of exhibits. Among those who signed up early for exhibit space: Pullman-Standard U.S. Steel, Ford Motor Co., WABCO, Westinghouse Electric, Bendix Aerospace, Motorola, PPG Industries, H.K. Porter, Transportation Displays, Inc., Gulf Oil Corp. The conferees will hear a blue-ribbon panel of speakers, including DOT Secretary John A. Volpe, keynoter; DOT Under Secretary James M. Beggs, UMTA Administrator Carlos C. Villarreal; Governor Milton J. Shapp of Pennsylvania; and leading transit experts from the U.S., Europe and Japan.

Canada's LRC begins its road tests

The first coach for LRC—Canada's 120-mph "lightweight, rapid, comfortable" passenger train—has started a month's test runs following its completion at MLW Industries in Montreal (RA, June 14, p. 14). The $2-million LRC project is a joint venture of Alcan Aluminum, Dominion Foundries & Steel and MLW, and is funded 50% by the Canadian government. The low-slung 85-foot aluminum coach of monocoque design without center sill is "banked" on its pair of two-axle trucks by a Dofasco hydraulic system which permits the car to traverse existing curves at higher-than-normal speeds without passenger discomfort. A special low-profile, aluminum-bodied diesel-electric locomotive with the Dofasco banking system is now scheduled for completion at MLW early next year. A six-car LRC with one of the 3000-hp locomotives at each end is expected to accelerate to 120 mph in four minutes and should permit a three-hour Montreal-Toronto schedule. In addition to Canadian corridor markets, the new train is seen as a contender for similar services in the U.S. and Europe.

Twin Cities wants to dig in '75

The Twin Cities Area Metropolitan Transit Commission has established a new timetable aimed at shortcutting the not-so-rapid process of setting up a rapid-transit system for the first time. J. Douglas Kelm, who was appointed to the post of commission chairman by Minnesota Governor Wendell Anderson on July 1, has announced that the Twin Cities could have a system in operation by the early 1980s if the machinery is set in motion now which could bring about construction of the system's first line in 1975. Kelm hopes to have decisions on the type of vehicles to be used and the corridors in which they'll operate finalized for presentation to the 1973 legislature. By the time the 1975 legislature is in session, the MTC should be prepared to present a comprehensive transit financing plan, Kelm added.

DOT contracts:

To the Dashaveyor Co. of Los Angeles, Ford Motor Co. of Dearborn, Mich., Transportation Technology Inc. of Denver, and the Varo Corp. of Garland, Texas, separate contracts worth about $1.5 million each for construction and demonstration of Personal Rapid Transit (PRT) systems. Dashaveyor will build a 31-passenger, rubber-tired vehicle, electrically propelled with a guideway switch. Ford will supply a smaller 24-passenger-car system, incorporating an on-board switch. Transportation Technology is to demonstrate a PRT system with air-pad suspension and linear-induction motor propulsion. Varo, a Rohr affiliate, will demonstrate a suspended monorail PRT using on-board switches activated by the guideway.

Can today's suppliers meet tomorrow's demands?

By JOE ASHER

He ought to be good. He's using my act.

—Fred Allen

That, in essence, is the attitude of established transit suppliers to the invasion from aerospace. Old-line builders are squirming as they watch aerospace companies circle in the sky, then swoop down into a tiny market and scoop up whatever contracts there are.

Consider. First there was United Aircraft, which designed Turbotrains for the Northeast Corridor and for the Canadian National. Then Rohr Corp. picked up the plum of the decade—BART's 250-car order—from under the noses of the established builders.

In the past eight months, the Urban Mass Transportation Administration tossed study and demonstration grants to Boeing, Rohr, Grumman and Vought Aeronautics. Rohr and Vought are bidding on cars for the Washington Metro; it looks like Boeing will bid on cars for Philadelphia's SEPTA. Make no mistake—this *is* an invasion.

• **Casey at the bat.** The established suppliers aren't smoldering behind closed doors any more; they're hollering right out in the open. Pullman President Samuel B. Casey has suggested that aerospace companies may have an inside track on transit bids, involving Federal money; at one point, Casey talked about court action.

UMTA Administrator Carlos C. Villarreal flatly denies the charge, saying, "We're glad to see bids from anyone who's qualified. Not just aerospace—anyone."

Maybe so. But not just anyone is bidding on car contracts; aerospace companies are. The winding down of big-time Defense and NASA spending has left them awfully hungry, and the obvious move is to diversify into ground transportation.

All this would be strictly power politics, if it didn't also raise some fundamental questions about the job that transit carbuilders and their subcontractors are now doing.

—Are present-day suppliers lagging in technology?

—Do aerospace people have something to offer besides jargon about system expertise?

• **"We've got the know-how."** Here's a sample of what the established builders have to say. According to E. T. Ahnquist, president of Pullman's car-building division Pulman-Standard, "The technology exists *today* to solve transportation problems within the cities. We've got the know-how to provide not only vehicles but a complete turn-key operation. Pullman-Standard could build the vehicles, and Swindell-Dressler [another Pullman division] the structures."

To this, George Green, Pullman, Inc. executive vice president, adds: "We're prepared to carry any kind of systems development all the way through, and that includes arranging

How are things in Glocca Washington?

The Urban Mass Transportation Administration has spent around $100 million on research, development and demonstrations since its inception—$37 million in the past fiscal year alone. UMTA Administrator Carlos Villarreal is pushing to increase that figure in the next few years.

After praising Villarreal and his boss, DOT Secretary John Volpe, for upping the ante and for starting work on the Pueblo test track, transit men still worry that some cash is going for reinventing the wheel. UMTA Assistant Administrator for Research Development and Demonstration, Dr. Robert Hemmes is a youngish, intense, soft-spoken man who outlines for you meticulously planned programs for work on traction, suspension systems, tunnel boring techniques, et al, with short-, medium- and long-term time frames assigned for each. After it's all over, you're still wondering what that $100 million produced, aside from a lot of debugging à la Defense and NASA.

When told that Hemmes was formerly an Associate Professor of Industrial Engineering at Stanford, one long-time transit operator said: "Industrial engineering is my background, too. I know the type. Extremely careful feeding of operating data into a computer. But the computer doesn't know what to do when it snows, and the car wheels slip."

That may be too harsh. Still, there's no doubt UMTA is smiling at anyone with something sexier than a conventional rail transit car.

Tracked air-cushion vehicles? No doubt they're coming. But fundamental work on them could swallow $37 million alone. Either UMTA money is being spread too thin, or its policy men are fuzzy about priorities.

Personal rapid transit? UMTA is handing out demonstration contracts right and left for "people-movers." But Walter Douglas, senior partner in Parsons Brinckerhoff, Quade & Douglas,

"Yes," say the established builders, who in lean times have developed existing technology, and now want a chance to put it to work.

"Maybe," says DOT—but DOT is hedging its bets.

"We want a piece of the action," says aerospace.

the financing and getting other corporations involved in the package. We'd like the opportunity to sell municipalities on the idea of purchasing systems on a performance basis, not just a low bid."

Other Pullman people are saying that (1) they could build a full-fledged automated system with no on-board manpower right now; (2) they proposed innovations like dual-propulsion cars with chopper controls, only to see them rejected; (3) in-house research is going on into things like an all-aluminum truck and greater use of plastics; and (4) a close watch is kept on technical developments the world over.

Over at General Steel Industries, they're less vehement, but just as outspoken. GSI Chairman W. Ashley Gray, Jr., says: "We're fools if we don't go along with change. It's all wise and well to work toward more exotic vehicles in the future, *provided* it does not take time, effort and money away from solving the critical needs today."

Gray continues: "We've built all kinds of cars, not only conventional ones, but monorail and Skybus. We've got experience working in stainless steel, LAHT steel, aluminum and fiberglass, and a number of firsts: the first all-aluminum car, the BART design mockup car, the self-propelled double-decker commuter cars now going to the Illinois Central.

"It's true there hasn't been *enough* R&D. But the scope of innovation was limited anyway by the reluctance of the operators to try something new. They needed compatibility on the older systems. Now, with new systems, there's a whole new ball game."

A latecomer to this "new ball game" as a prime car contractor—though a long-established supplier of major electrical components—is General Electric, which has emphasized its ability to provide "total systems integration for improved reliability and rider comfort." GE entered the prime-contractor lists after Budd withdrew.

Another newcomer to the U.S. car market is Hawker-Siddeley Canada, which won an order for PATH (Port Authority-Trans Hudson) cars. The specter of foreign competition is an additional unsettling factor in the present picture. Japan, turned back several years ago in an attempt to invade the U.S. market, is trying again with the WMATA order.

• **The operators speak up.** Transit operators view the present "state of the art" controversy with mixed feelings. Some are saying the established builder protesteth too much; others suspect the new boys on the block from aerospace will get a black eye taking on something they know nothing about.

(Oftentimes, builders' protests are directed at the consulting firms who write the specifications for vehicles rather than at the operators themselves. Specifications are so rigid, complain these builders, that they are unable to use some of the proven materials and subsystems which they know from experience are vastly superior to what is called for. When shorn of the ability to use their own ingenuity and creativity, they add, they sometimes encounter a quality-control problem. Ultimately, they alone must shoulder the blame. They don't like it.)

Here are some sample comments from transit operators:

"I think the aerospace companies have a definite role to play. Partly in development work, but most of all in managerial techniques. A few years ago, we didn't think the four-minute mile or the seven-foot jump was possible. Then all of a sudden they were. I'm convinced the old-line carbuilders will respond to the challenge. It will be something like China absorbing its conquerors."

—Michael Cafferty
Chairman
Chicago Transit Authority

"Overall, I'm optimistic about aerospace firms coming in, provided they're ready to commit money for R&D. My only worry is that there might be some impractical new applications. In past years, other companies thought they had something new to offer, lost their shirts and got out. Of course there's lots of room for improvement. Up until ten years ago, there just wasn't anybody building a better mousetrap. But the new Cleveland cars, new Chicago cars, the Lindenwold cars, and of course BART—these are all improvements. However, a fresh look from outside would be good."

—Robert T. Pollock
General Manager and
Chief Executive Officer
Cleveland Transit System

"There has been some progress in the past decade, although we've had disappointments in specific areas. From our own experience, we've had too much manufacturing that's done by adherence to past practice and tradition, and not enough attention to interraction of components and systems. For

and probably the dean of transit consultants, points out the pitfalls:

"Putting automated taxi-like vehicles underground would be economically prohibitive. Putting them on a lacework of elevated lines down every street is socially out of the question. They might be possible in restricted applications, but I don't see them for high-density transit."

While Dr. Hemmes was in one room insisting to this writer that UMTA is *not* merely looking for new wrinkles, DOT Secretary Volpe was in another room, announcing four more people-mover contracts.

—J.A.

example, how do new systems and equipment affect components of traditional design, like the standard wheel? As a public agency operator, I'd welcome additional competition, as it's likely to produce better prices and added pressures to improve quality in engineering and manufacturing."

—Louis J. Gambaccini
Vice President and
General Manager
PATH *System*

"We don't need something overly sophisticated. Just a reliable product to do a tough job. The real innovation we need is money—allocation of more funds."

—R. G. Davidson
Director of Planning
and Construction
Massachusetts Bay Transportation
Authority

"Too many people are in love with innovation for innovation's sake. Look at Toronto: one of the best-run systems around, fast, reliable, and the only one carrying more passengers than in the days of World War II gasoline shortages. The technical innovations there have been modest."

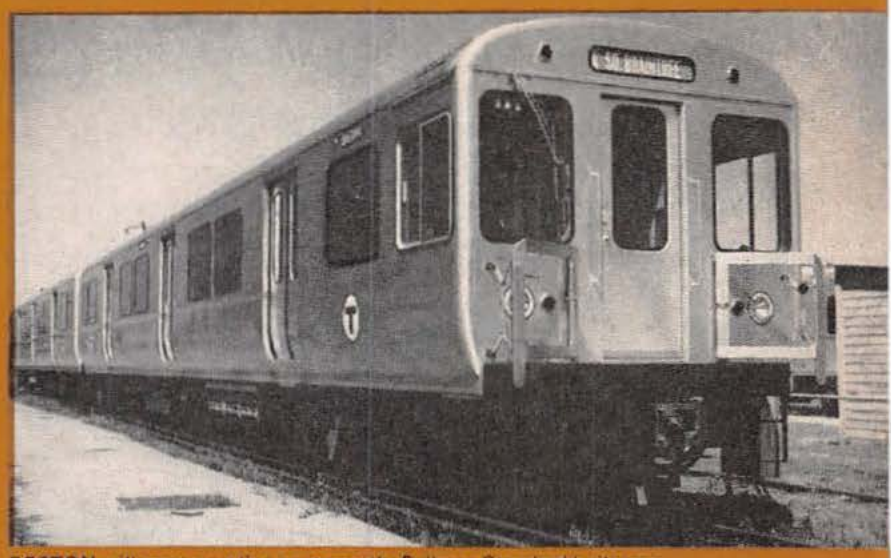
—Edison L. Tennyson
Deputy Commissioner for Transit
City of Philadelphia

Back in Mexico City last spring at the annual meeting of the Institute for Rapid Transit, Dr. William Ronan, chairman of the Metropolitan Transportation Authority, was saying that New York needs fast, efficient cars, not "esoteric" ones. Was that a tip-off that New York (the industry's biggest customer) will give the shoulder to any aerospace proposal?

Look again. No one is more sharply critical of present-day suppliers than Kim L. Pollitt, Assistant General Superintendent for Car Maintenance, New York City Transit Authority. Pollitt, whose title covers new car engineering, says:

"The performance of transit car suppliers is definitely inadequate. It's worst in operating reliability of components, but that's the carbuilder's fault for not being a better system manager. I'm aware that our maintenance gets criticized, and certainly it isn't all it should be. But that doesn't explain traction motors going out of service by the hundreds in their first year or two. Competition from aerospace companies, with their systems capability, should give the suppliers a good prod."

From soundings like these and others



BOSTON will open new line next month; Pullman-Standard built cars.

ADVANCES IN THE 60'S

Higher operating speeds

Lightweight carbodies—stainless steel, LAHT steel, aluminum, fiberglas

Faster acceleration and braking

Transistorized cab signaling, leading to. . .

Automatic train control

Solid-state chopper controls

Automatic fare collection

...and coming in the 70'S

AC propulsion

Regenerative braking

Modular carbodies and components

Better wheel/rail adhesion

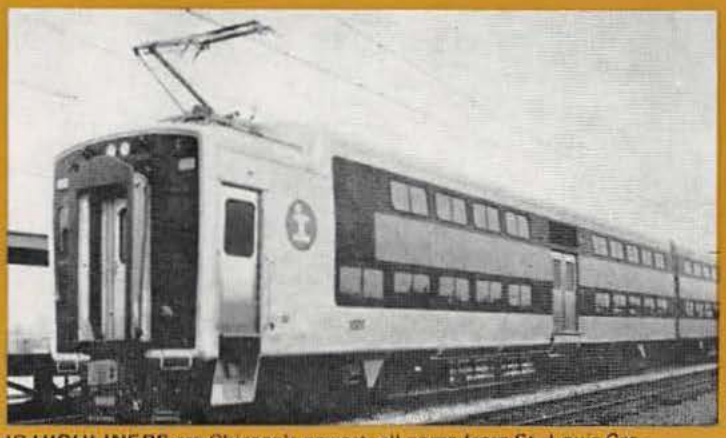
Tracked air cushion vehicles?

Laser-beam boring of tunnels?

LINDENWOLD first demonstrated automation; Budd cars attracted riders.

JERSEY ARROWS were built by St. Louis Car; the state plans for more.

BART CARS have been delayed as Rohr worked out problems.



IC HIGHLINERS are Chicago's newest; all come from St. Louis Car.

TORONTO has cars from Hawker Siddeley (above) and MLW.

NEW YORK MTA will get first cars from General Electric.

AIRPORTERS by P-S serve pioneering Cleveland line.

BIRDS FLY.

That's what birds do best.

But who'd ever ask a bird how to run?

Flying is one of nature's most highly developed arts. With man, it is backed by a highly developed science.

Moving over the ground with increasing speed and ease is an equal art. But it is backed by a very different science, dealing with a totally different medium of movement and laws of physics.

Man's ability to master the many physical limitations of high-speed surface mobility is a complex achievement.

In fact, the rail transit cars that move millions of people day after day are actually more complex than the watch you are wearing on your wrist.

An ordinary transit car carrying people at a mile a minute contains up to 50,000 separate component parts, each expected to function smoothly, safely, and surely.

Yet this precision creation is ex-

pected to be impervious to abuse and torture, capable of withstanding 200,000 pounds of horizontal pressure, or the crash of a concrete block against its windshield at 80 miles an hour.

And this precision instrument called the transit car will be expected to run 2.5 million miles with daily dependability.

Few people have mastered the science of high speed rail-guided transportation.

None have equalled the total achievements of Pullman-Standard.

None can equal the 105 years of experience, the cumulative scientific knowledge, the army of highly specialized engineers and scientists, the technological facilities of the vast and only research facility in the transit car field, and the ability to provide equipment that is still years ahead of practical readiness.

And none can equal Pullman-Standard's reputation for transit equipment that meets the highest requirement of all:

PULLMAN-STANDARD TRANSIT CARS RUN.

PULLMAN-STANDARD, A Division of Pullman Incorporated, 200 South Michigan Avenue, Chicago, Illinois 60604

THEY STUCK IT OUT: Federal R&D money is old hat to aerospace, but manna from heaven to established transit suppliers. They managed to make progress even in the lean 60's.

among the operators, three things emerge.

—There's a consensus that definite technical progress was made in the past decade. There is *not* a consensus that it was good enough or fast enough.

—Complaints about present-day technology turn out on examination to be more about quality control than about the technology itself.

—Transit people by and large are willing to listen to the aerospace people, if they have something better to offer.

Do they? Scrape away all the Fuller Brush Man talk, and here's what you find:

United Aircraft had well-known troubles with its Turbotrains. So did Budd and Westinghouse with the Metroliners. No point for either side.

Rohr's prototype cars from BART came in late and overweight. Rohr blames Westinghouse as sub-contractor for traction; Westinghouse says the equipment "worked fine" in the plant, but needed adjusting in an "unfamiliar environment." The cars are being adjusted, and the tenth and last prototype is about to be delivered. No point yet for either side.

After the dust settles on all the special pleading, can any conclusions be drawn? Here are some simple ones:

—Aerospace people must stop talking about their advanced systems capability. Transit men like Cafferty, Pollitt and others profess to admire their superior fabricating and metallurgical know-how. Well, it IS superior. But billion-dollar cost overruns at Lockheed and Grumman are no argument for miracle systems. Neither is the fact that aerospace is financially depressed, although their return on capital typically runs 30%-40% on government contracts (G.A.O. figures to Congress last spring).

—Established suppliers must understand that the market is not theirs by divine right. Operators are howling about poor quality control. As NYCTA's Pollitt says: "Excuses about plant changeovers and the like are simply unacceptable."

That much said, it looks as though competition is heating up, and some aerospace boys will definitely stay on the block permanently. Not all, because as Cafferty, Pollitt and others point out, at some point they will have to make a substantial financial commitment to stay in the game.

Right now, Rohr and Boeing look like the companies to watch: Rohr, because it did make a good-faith commitment of dollars in ground transportation, to back up fine words; Boeing, because of its willingness to listen to what experienced, not far-out, people in the business, have to say. Men of the caliber of Gerald Spencer, vice president of consultant Coverdale & Colpitts and former chief of rail planning for PATH; Albert Dean, a former Budd vice president; Jack Brannan, former chief mechanical officer of the Long Island Railroad.

GSI's Ashley Gray has said: "There are definitely things we can learn from aerospace people, and they can learn from us."

John M. Cord, Program Manager for Transit in the Surface Transportation Systems Dept. at Boeing's Vertol Division, uses practically the same terms about the supply establishment. Cord, like Pullman's George Green also wants to see the industry move from bidding purely by price to bidding to performance specs. And he adds: "We'd expect to be price competitive and take complete responsibillity for a package, including subcontractors' components."

At bottom, that's what transit people really want—cross-fertilizaation. Something of the new techniques, something of the school of hard knocks.

Is UMTA listening? ■

MEZZANINE has pair of large fare control areas entered by exact-change turnstiles; quarter of daily riders travel in peaks.

MOVING PEOPLE

PATH opens a major new terminal in New York

AIR CONDITIONED platform area has also received special acoustical treatment.

The first air-conditioned subway station—and the largest rail terminal built in the New York metropolitan area in over three decades—has opened under the World Trade Center in downtown Manhattan. Port Authority Trans-Hudson, interstate (New York and New Jersey) transit operation of the Port of New York Authority, operates the new facility built within the foundations of the pair of 110-story office buildings that now dominate lower New York.

● **Highest peaks.** Opening date for the new five-track terminal was July 6, following a three-day shutdown of train service which permitted completion of new track connections from the Hudson River tubes. World Trade Center now handles about 85,000 riders each weekday with 20,000 passing through both in the morning and evening peak hours. According to a study by the International Union of Public Transport (UITP), PATH traffic is more heavily concentrated in its morning and evening peaks than any other urban rapid transit system in the world. By 1975 WTC is expected to handle 100,000 riders daily with 25,000 at the peaks.

Since the 90-second limit for headway in the single-track tubes has already been reached, PATH designed 500-foot platforms to permit lengthening of trains as soon as 46 new cars are delivered by Hawker Siddeley Canada early next year. The terminal has been designed to minimize vibration and noise from train movements. Acoustic panels are used on the ceilings over the pair of island platforms and the single-track platform, all of which are illuminated by diffused fluorescent lighting along the edges. Rails and ties are mounted on neoprene pads, acoustic buffer walls are installed at the ends of all platforms, and sound absorbing material has been applied to the undersides of the platforms and to the car-floor-height sound barriers which are between all the tracks.

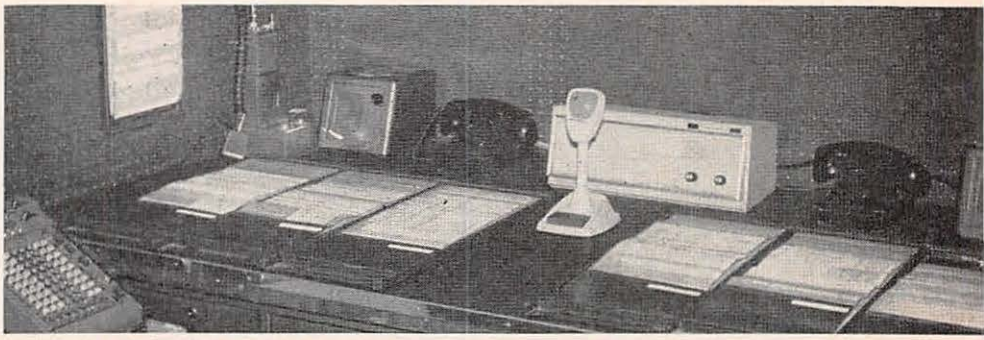
High-speed escalators deliver passengers to a 50,000-sq-ft mezzanine 14 feet above the three platforms. Forty exact-change turnstiles provide access to the two "fare control" areas which make up nearly half of this mezzanine.

● **Exact fare.** Bill and coin change making machines have eliminated all manual token and change dispensing, freeing agents to provide information and assistance to passengers. High-fidelity speakers are recessed into the ceilings.

Eleven high-speed reversible escalators (see cover) connect the mezzanine with streets, some 60 feet above track level. A new silicon-rectifier substation has been installed to power the new terminal. ■

M/W scheduling: It's in the cards

TP&W now utilizes computer-oriented plans for track maintenance.



CONTROL CENTER at East Peoria headquarters has trays of current work-order cards for all section and extra gangs. Telephones and radio give contact with forces.

For years, railroads have scheduled their rail-laying, tie-renewal and out-of-face surfacing programs. They get daily reports on the amount of work performed by these gangs. But, what about routine track maintenance? How many roads know what and how much work their section and small maintenance gangs are doing? The number of men engaged in this work can far exceed the number employed in the extra gangs.

Toledo, Peoria & Western is one railroad that does know what routine maintenance is being performed. It put a new plan into effect at the beginning of 1970 which has enabled it to get greater production in the handling of routine track maintenance. Prior to that time, the section foremen planned their daily work under the direction of the track supervisors. Alvin W. Polich, TP&W's general manager and chief engineer, felt that this practice was resulting in too much non-productive time. He and his assistant chief engineer, Jack H. Franklin, devised a plan for the work on a more systematic basis.

● **Computer-oriented system.** "A lot of money goes into track maintenance," says Polich, "and we felt we had to have a better way to control these expenditures. Our new system is data-based and computer-oriented. As such, it opens up many facets for gaining more knowledge of our costs and practices."

TP&W is a single-track railroad operated under timetable and train orders. It is comprised of 239 miles of main track and 83 miles of side tracks, and includes almost 500 turnouts. Responsibility for maintaining these fixed properties rests with Polich and Franklin. Reporting to them are a roadmaster, a systems engineer, a field engineer, a bridge and building-signal supervisor and a clerical force, with headquarters at East Peoria, Ill., at about the mid-point of the road.

Reporting to the roadmaster are two track supervisors, one for the East Subdivision and the other for the West, each with three sections and a track patrolman. Also under the jurisdiction of the roadmaster are a system gang for spot surfacing, a tie gang, a rail gang, a surfacing gang and a welder. Work of the four large gangs is programmed and under the constant scrutiny of the roadmaster.

● **Work orders are the key.** All routine track maintenance is now handled under individual M/W work orders. This work includes such activities as track patrolling and inspection, changing out rails, frogs and switches, unloading ballast and other track materials, replacing joint bars and insulation, repairing highway crossings and fencing, applying and adjusting rail anchors, snow and ice removal and all the other small chores that must be carried out by these forces. Each of these tasks has been assigned a code number that designates the type of work, whether it is on main, side or yard tracks and the gang on whose territory the work is located. These numbers are related to the ICC accounting numbers so that accounting charges can be made right from the work orders.

The work orders are originated at the track-supervisor level, although the roadmaster and assistant chief engineer also can write them up when the occasion demands.

Work orders are written on printed Form 745 on white, yellow, green and red cards. The track supervisors carry a supply of both the white and yellow cards with them as they go over their respective territories on a Hy-Rail truck. Whenever they see work that should be done, they write up a work order to cover it on a white work-order card, which is sent to the chief engineer's office.

The track supervisor makes a duplicate of his work order on a yellow card, which is his record, and he marks the date on both his and the white card. In one day, the supervisor may originate several work orders for the same gang.

When the foreman gets the work-order assignment from the supervisor, he enters the same information on a similarly printed green card. He proceeds to do the work according to the priority the track supervisor decides upon. When the work is completed, he fills in the actual hours in the proper spaces, and at the end of the day sends in all of the green cards he has for the work completed that day. If he does not finish a job in one day, he holds the green card and fills out a red card for the hours worked. He may have to make several red cards for one job but, when the work is completed, he sends in the green card covering the entire project. These cards are made in lieu of the foreman's "Daily Distribution of Labor" reports that were formerly used.

● **Weekly computer readouts.** The foreman sends his cards to the chief engineer's office where they are sorted by gangs and key punched. Each week a computer printout is obtained from them, showing the section number, dates, work orders, task numbers and all work done daily for the week, with the manhours expended to date.

A second weekly printout report is listed by task numbers, dates and the accumulated manhours consumed to date.

The computer printouts permit the information to be extracted from the daily reports in any way desired. For instance, the total manhours devoted to brush-cutting can be obtained. This information may show that it would be more economical to purchase a machine for cutting brush. Other extractions may compare actual manhours

with the estimated hours, the percentage of work remaining to be done in each task category, and so forth.

● **Control center.** Trays of white-card work orders are kept on a desk called the Control Center at headquarters in East Peoria. There they may be examined by the supervisors, roadmaster and the assistant chief engineer so that all are informed.

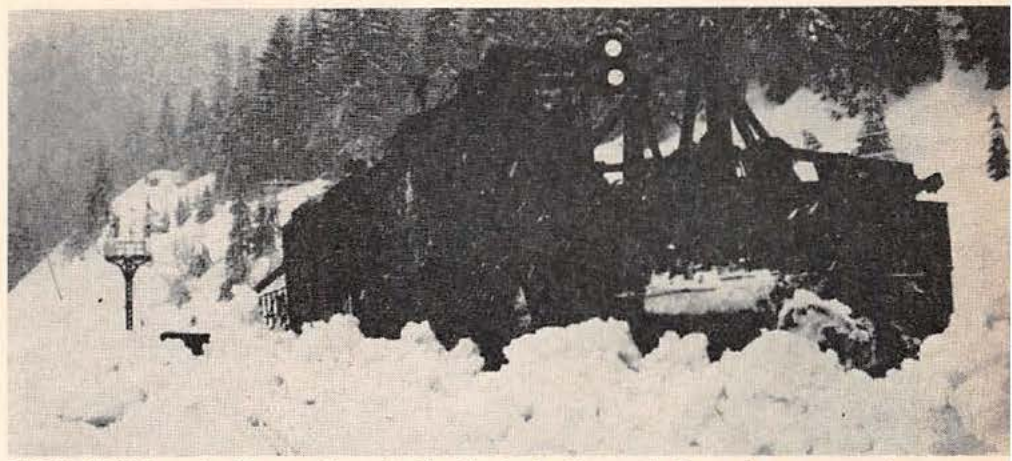
In addition to the work-order trays for the cards for all six sections and three extra gangs, the Control Center has two telephones connected to the dispatcher, one for each subdivision, and a radio transmitter-receiver. The latter is a remote unit that is connected to the railroad's base station at East Peoria. Other base stations are located at Kolbe, Ill., Canton and LaHarpe.

● **Daily conference is held.** Polich believes in good communication between his supervisory personnel so that all will know what is going on and can coordinate their efforts toward a common goal. As a result, he has established a "conference" period from 1:30 p.m. until 1:45 p.m. each working day.

At that time the dispatcher's telephone is at the sole disposal of the M/W forces and all section and extra gang foremen, track patrolmen, track supervisors and the roadmaster make it a point to go to the nearest dispatcher's phone to participate in any discussion that affects their work. The assistant chief engineer often listens in at the Control Center and takes part in the conferences. The conference lasts 15 minutes but the dispatcher has priority and can pre-empt the use of the phone in the event that there is a need for train-operation orders. When the track supervisiors are in town, they use the Control Center for their conferences, but no one has to be there as the conferences are set up by the dispatcher.

Through the conferences, the track supervisors can use their work-order cards showing the backlog of work to the end that their gangs can be assigned a full day's work. The use of the company's crane is likewise coordinated with the various tasks, thus increasing its productive time.

Polich says the new system is giving a lot better control of small jobs and of the proudctive time of the forces. The work-order cards provide management with information not available heretofore. Right now, he adds, the full line width of characters available on the computer is being used. Other information, such as the ties, rail and other track material being used, cannot be extracted at this time without more card sorting and another printout. In the future, he hopes to extend the use of the work-order cards to bridge, building and signal work. ■



SNOW TRAIN works its way through Washington's Stampede Pass. A snow crew is stationed on this mountain during snow season with spreader and bulldozers.

BN's early start on snow fighting pays off

Railroad's dozers have big role in keeping passes open despite winter's snows of up to 600 inches.

Many railroads have to contend with snow in winter. But how many have lines through mountain passes where storms will dump 100 inches of snow in a week and where snow accumulation will be 16½ feet above the rails?

Burlington Northern had that experience last winter—and its men accepted this difficult situation matter-of-factly in keeping the passes open for trains. They frequently are referred to on the road as "snow kings."

Burlington Northern has three main lines crossing the Continental Divide of the Rocky Mountains in Montana. One is the Marias Pass along the south rim of Glacier National Park near Summit. This crossing is at an elevation of 5,215 feet above sea level, and has an annual snowfall that totals from 200 to 600 inches. Last winter season, it had almost 550 inches of snowfall. Prevailing storms from the west and north sometimes drop up to 30 inches of snow at a time along the west mountain slope between Summit and Essex.

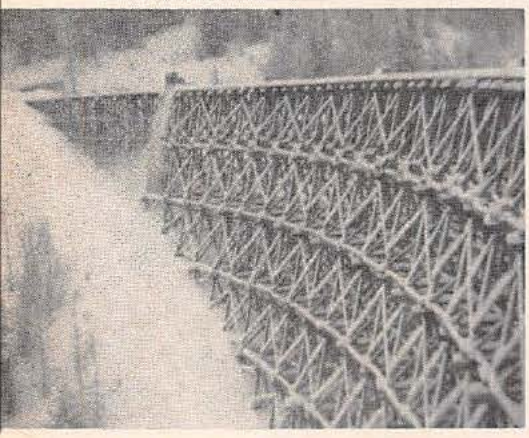
The two other crossings are at Mullin Pass, west of Helena, elevation 5,545 feet, and Homestake Pass, east of Butte at an elevation of 6,320 feet above sea level. Both lie in snow-belt territory but do not present too difficult a problem and are normally cleared with the use of a McCann spreader car and bulldozers.

● **Start clearing early.** Division Roadmaster W. E. Carlson, at Missoula, Mont., says that trains normally can be kept running through these passes with the use of bulldozers. A spreader car is used occasionally—only twice last winter when about 100 inches of snow fell in one week. Carlson says the snow usually is heavy and moisture-laden so that little drifting occurs. The secret of keeping trains on time through these passes, he adds, is to start the bulldozers working early in a storm. That way, they can keep abreast of the work.

Carlson applies snow treads to the bulldozer tracks to prevent the build-up of snow between the rollers and the treads. The bulldozers are equipped with radios, so the operators can talk to supervisors and approaching trains, and with oscillating lights, assuring that the machines will be visible during storms. The snow season extends usually from mid-November to the end of March.

According to Carlson, the most troublesome pass on his territory is not on the main line, but at Lookout Pass which carries a twisting branch line westerly from Missoula over the Bitter Root mountains to Wallace, Idaho. This branch is used for hauling ore from mines at Wallace and must be kept open along with the yard at Wallace. It has considerable grades west of

BULLDOZERS are now primary means of moving snow down sides of the mountains. Rotaries once did this.



TRACK-WALKING SHOES are applied to one dozer which clears trestles on branch line through Lookout Pass.

"Off-track" equipment does big share of track clearing

Haugan with a maximum of 4% grade over Lookout Pass.

Carlson reports that on January 21 of this year, following a severe storm, more than 130 inches of snow stood on the ground at Lookout Pass and it was necessary to work an extra bulldozer. He used a road grader and salt to keep the snow down at the switches and a Speed Swing with a 2½-yard snow bucket and a bulldozer for pushing the snow into a river. Where the line parallels an Interstate highway, and there is the possibility that the snow might slide down from the railroad onto the highway, he sometimes makes arrangements with the highway authorities to have their snow-moving equipment there at the same time he is working.

District Roadmaster M. E. Nyberg, who maintains this branch, says "Our snowfall at this pass for a 16-year average is 370 inches, with some years as high as 546 inches. This presents a considerable snow-removal problem in this high mountain country."

● **Increase number of bulldozers.** "Up to the winter of 1955-56," Nyberg says, "the removal of snow was done by a rotary snow plow which ran ahead of the local trains each day and made a round trip six days each week from Wallace to St. Regis. This rotary snow plow had a crew of seven men, a regular crew of five men on the engine and caboose and two enginemen running the rotary plow. The winter of 1955-56 was the last year for the rotary plow on this branch, as we then began the use of bulldozers to remove the snow."

Nyberg explains that "All small cuts were daylighted on the downhill side to allow the snow to be pushed over the side of the mountain. We begin our snow season the last of October with one dozer, a D-6, that has the same gauge as the track and can walk the track over the trestles. Later, as we get more snow, we bring another dozer into use, a D-7, which then works on the east side of the pass and the D-6 works on the west side which has the trestles. In January and February, our heaviest snow months, we use a third dozer. Each one is worked by an operator and one flagman.

"The practice of the operator is to run the dozer on the track pulling the snow from the hill side and windrow it toward the downhill side. On the next pass, the windrow of snow goes over the side of the mountain," Nyberg continues. "These three dozers take care of 30 miles of track which is the heaviest snowfall area.

"At times when the snow is so heavy that dozers do not have enough time to get rid of the snow over the mountain side," Nyberg says, "we have run a McCann spreader car which will push the snow berm over the side. Most of the years, the dozers are able to take care of the snow."

● **Two passes in Cascades.** Burlington Northern has two passes through the Cascade Range in the state of Washington that had an exceptional amount of snow last winter, Division Roadmaster John Lihudis reports. These are Stampede Pass on the main line between Yakima and East Auburn, and Stevens Pass on the main line between Wenatchee and Everett. The snow season there is from the first part of November through March. Last winter's snow accumulation was about 500 inches at these passes. On January 27, it was reported that snow stood at 16½ feet above the top of rails in Stampede Pass.

When the snow season starts, Lihudis says the track force removes the rail-and-flange rail lubricators, planks at private crossings (there are very few public crossings in this area), and motor-car set-offs so that the spreader cars can be used without encountering obstructions. No flanger signs are necessary, he says, as the men are thoroughly familiar with the territory and know where the switches and frogs are located.

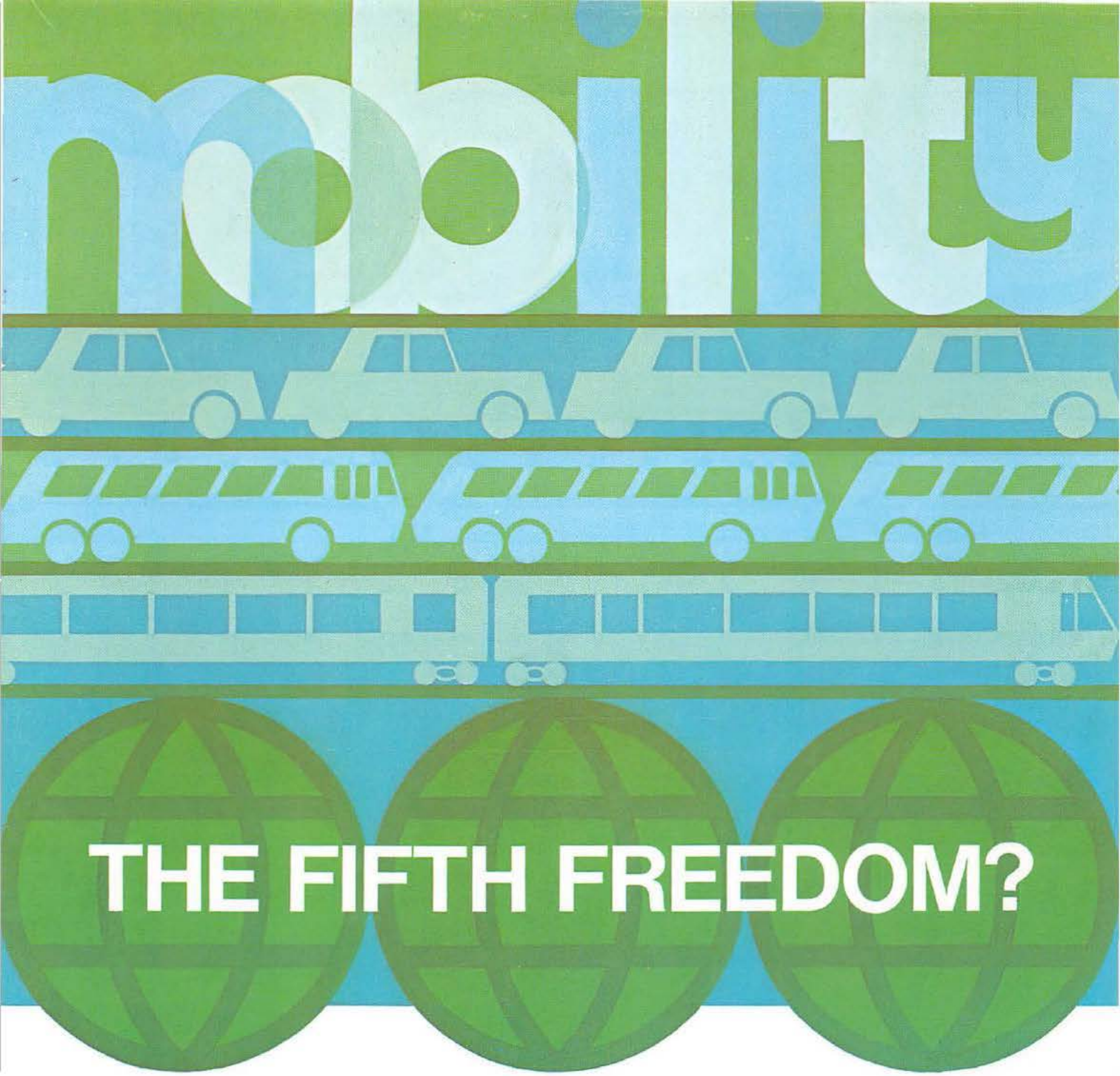
● **Station crew on mountain.** A snow train under the direction of Roadmaster R. A. Robey is used at Stampede. The train is comprised of a spreader car, locomotive, outfit car and caboose. A six-man section crew equipped with two large bulldozers is stationed on the mountain during the snow season.

Because Stampede Pass is relatively isolated, Robey's snow crew must be completely self-sufficient for a period of from two to six days. The outfit car is constructed and furnished to serve both as a bunk house and dining hall.

Two men will operate the bulldozers, two others will work the spreader and the other two will work on switches. The snow train covers about 50 miles of railroad at Stampede. A similar train for Stevens Pass covers about 90 miles of track. At one time last winter, Lihudis says he had three snow trains working in Stevens Pass.

At both entrances to the Cascade tunnel, which is at Stevens Pass, walking paths must be maintained for the trainmen while they inspect their trains. This is done by bulldozers and front-end loaders. Switches are kept operable with electric switch heaters.

Snowmobiles are used by the sectionmen in the Cascades for getting to outlying switches and by signal maintainers and linemen while they look for trouble in their territories. ■



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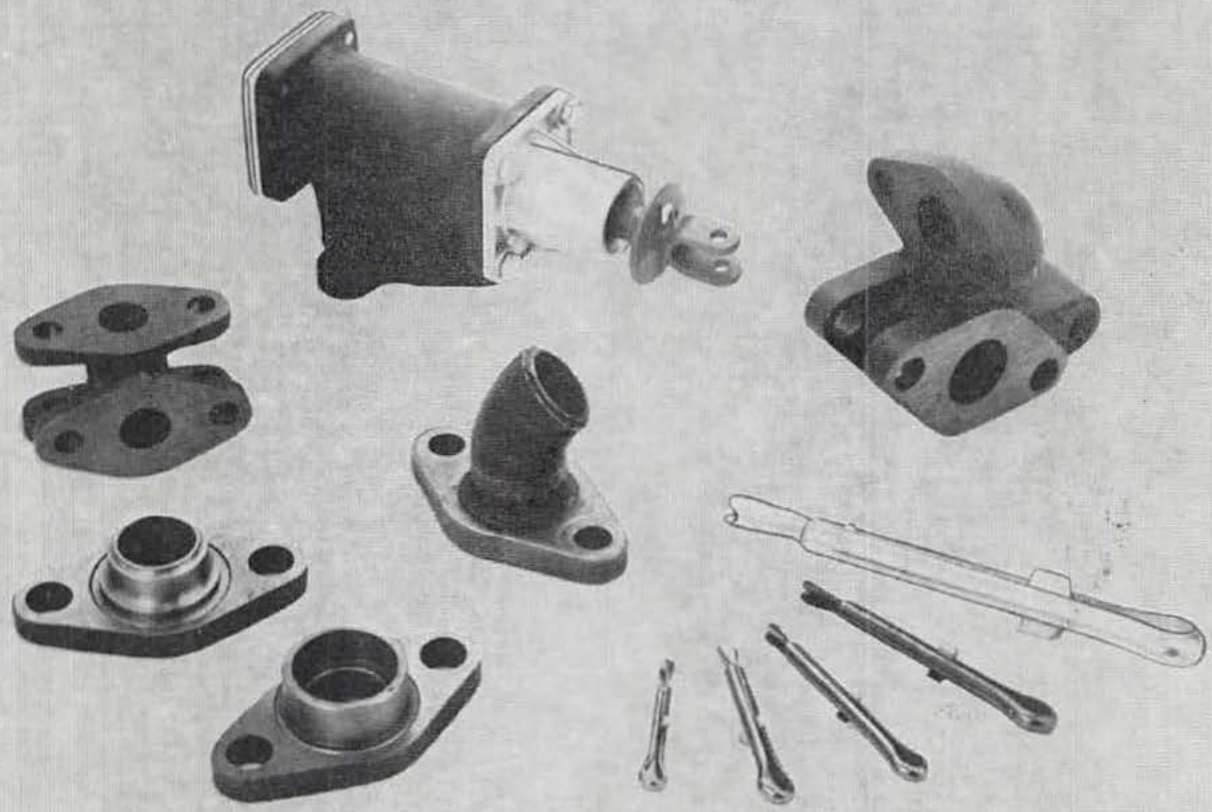

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Now consider improvements.

First, the basic 60-channel assembly, like the one shown above, is less than one-third the size of its predecessor. In fact, the basic assembly (including channel carrier supply, fuse and filter panel and summary alarm panel) takes up only 15 mounting spaces on a standard 19″ rack. The common equipment in the basic assembly is all you need to expand up to 240 channels on an 8′ rack or 360 channels on a 10′ 6″ rack. Each 60-channel add-on package only takes up 10 mounting spaces since it uses the common equipment in the basic package.

Second, there's simplified installation. Each basic 60-channel assembly and channel add-on package is prewired. To install the basic assembly, just tie the drops down and hook up to your existing equipment. When it's time to add channels, simply repeat the process with the add-on package and use the cable stub we supply to tie into the basic 60-channel assembly.

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The Bureau already has formal arrangements with about a third of the Class I railroads, and, with many industrial and other short-line roads. The completion of four-year courses qualifies apprentices as journeymen. Some roads use accelerated programs, turning out skilled machinists, electricians, carmen, car inspectors and other craftsmen in as little as three years. In the case of especially responsive students, two years is sufficient for the regular four-year course. Many other railroads use shorter REB courses for upgrading and refreshing. The Bureau also offers four two-year courses, as follows: Locomotive Engineers, covering diesel-electric Equipment and air brakes; Locomotive Electrical Equipment; Locomotive Mechanical Equipment; and Car inspectors and Carmen.

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Instructors of the Railway Educational Bureau, all active railroad men themselves, grade students' examination papers and make individual comments and suggestions to the students when such help is needed. In the case of formal, company-sponsored programs, the railroad gets a monthly report of each student's progress.

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Besides formal apprentice training programs on a contract basis, railroads may help an employe by paying half his monthly tuition, or all of it, or by reimbursing the employe on successful completion of his training. Or they may authorize payroll deductions.

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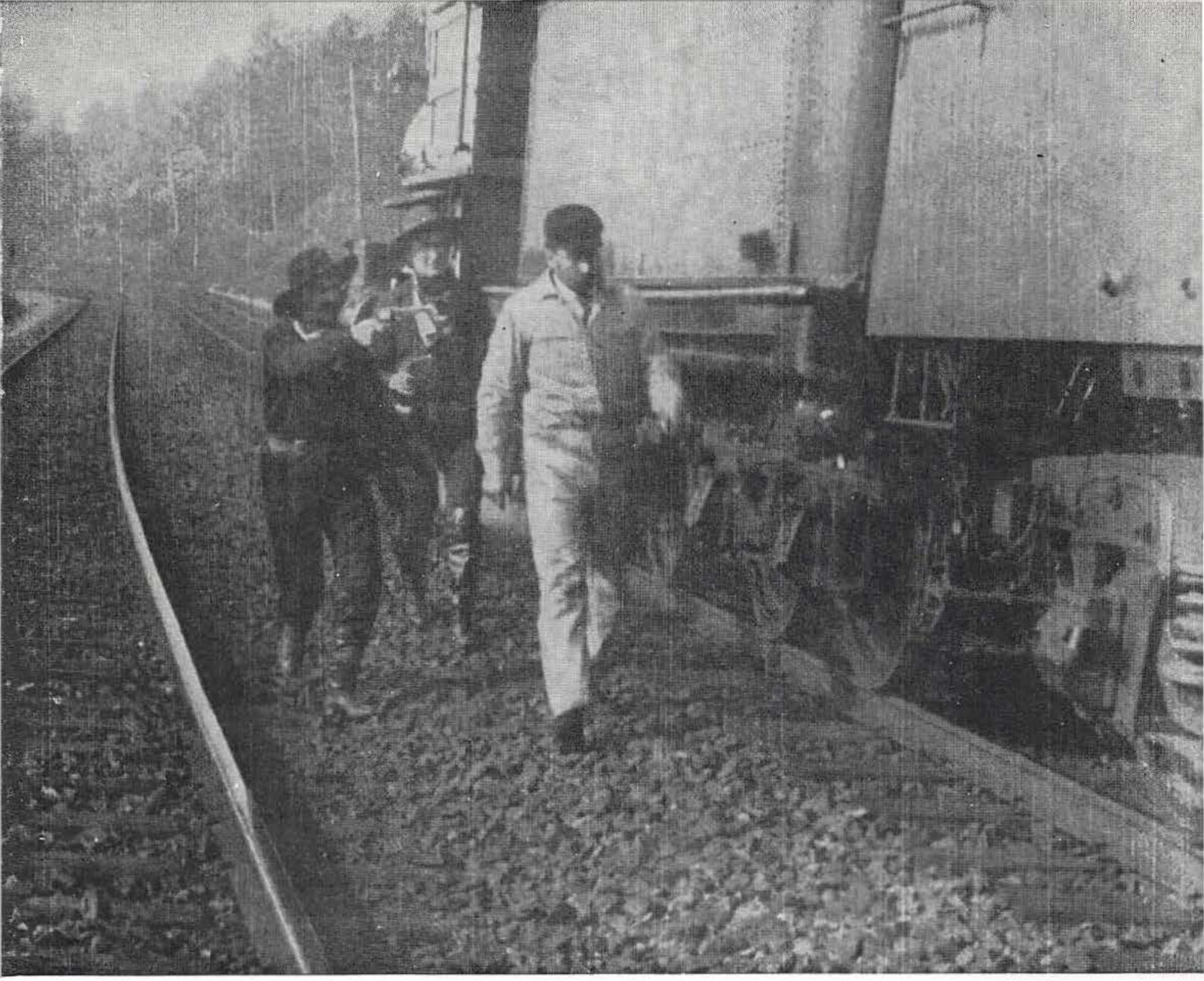
Write now, or phone, Reid Kenedy, Railway Educational Bureau, 1809 Capitol Ave., Omaha, Nebr. 68102, telephone (402) 341-7889.

Railway Educational Bureau



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EVEN without the guns pointed at him, our railroad friend's task of "walking the train" to find a hot journal box was not an enviable one. It certainly would have been simpler and quicker if he did have our new SERVOLARM® Trackside Hot Box Visual Display System.

Designed to operate with a standard SERVOSAFE® Hot Box Detector System, the SERVOLARM visually signals the presence of a hot journal box and also pinpoints its location by means of a digital readout axle count. SERVOLARM helps to eliminate train stops and crew delays. It simplifies and speeds up the entire hot box location procedure by directly notifying the crew via a trackside display board.

SERVOLARM can be quickly and easily installed with a minimum of construction equipment and labor, while eliminating long-distance wiring and extensive communication equipment costs. Compared to other, more complex methods of communication, SERVOLARM offers greater reliability and reduced maintenance.

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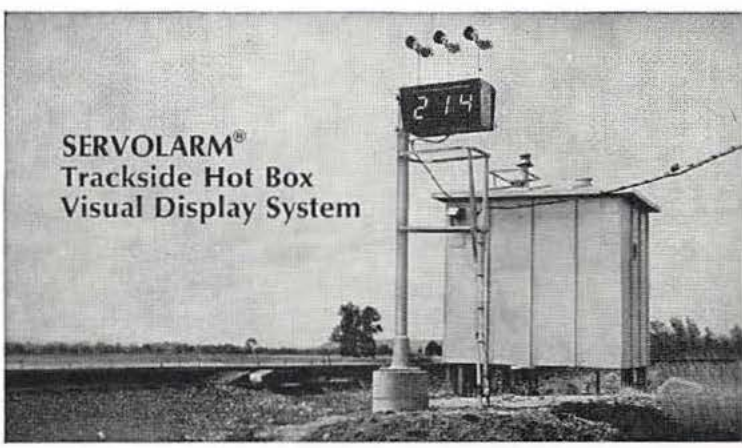

Bi-directional display board presents digital readout, showing axle count location of hot journal box. If no hot boxes are detected, display board reads "000". Flashing signal lamps on top indicate presence of hot box.

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New Products Report

Switch machines (RA-1)

Designed for mainline, interlocking, or rapid transit service, models 55E, 55F, 55G and 55H electric switch machines will operate either a single switch, doubleslip switch with continuous front rod, or any type derail. Model 55 switch machine is a direct replacement for all model 5 series machines. It weighs between 500 and 600 lb. (depending on model). Comparable model 5 series machines weigh approximately 1,000 lb.

Models 55F and 55H machines have dual control. Model 55 is available with either a 24- or 110-volt DC motor. Models 55G and 55H with 110-volt DC motors can be operated from 110 volts AC through an optional built-in rectifier. Operating time for a 24-volt machine is about 9 seconds; for a 110-volt machine, about 3.5 seconds.

Models 55E and 55F are controlled directly through a 3-wire circuit from external control relays; Models 55G and 55H, from a built-in biased neutral controller which provides for two-wire polarized control at 24 or 10 volts. Voltage change can be easily made in the field. *General Railway Signal Co.*

Message switching (RA-2)

The I-7000 series equipment combines the functions of computerized message switching with on-line data processing. The I-7000 features multiple mini-computers integrated with highly sophisticated and efficient parallel message processing software.

The I-7000 can operate independently as a store-and-forward message switching system to provide computerized control of the transfer of information over a high-speed terminal communications network. It has the capability to add one or more "back-end" computers of any manufacture and to provide immediate on-line access to these computers from any terminal in the network. Standard hardware and software are available to make this interface possible.

All basic I-7000 Systems are capable of handling 120 full duplex communications lines, expandable to 960 lines, with up to 15 terminals per multi-drop line. The I-7000 System handles CRT terminals, Teletype units and most other remote terminals on either dedicated or dial-in lines. It can accommodate a mixture of any standard synchronous and asynchronous data sets at speeds from 75 bits per second to 50,000 bits per second. The terminals may operate in half or full duplex mode and may utilize 5, 6, 7 or 8 bit character codes.

Two different models of the I-7000 system are available to provide a sustained total throughput of 5,000 or 10,000 characters per second, and to handle a peak load throughput of 10,000 or 20,000 characters per second. *Intelecom, Inc.*

Computer terminal (RA-3)

The model 100 information terminal is an inquiry-response terminal that communicates directly with a Friden model 20 processor. It also can communicate with other computers, through the model 20. When an operator begins, the terminal tells him what to do next from a display of 40 message instructions. When an entry is correct the computer acknowledges it. When an entry is wrong, the computer can tell the operator how to correct it.

Up to 10 programs are resident in the terminal which has the ability to retrieve up to 100 programs from the model 20 processor. Up to 160 model 100 information terminals can be accommodated by a single processing unit. Terminals require a simple two-wire hookup to the model 20 Processor, and can be installed to distances of over two miles from the processor without a communications modem.

Information is read directly from standard identification badges by a badge reader, and from punched cards by a tab card reader. Variable data entries are made through the keyboard. Prior to transmission, the time, station location, message sequence number and

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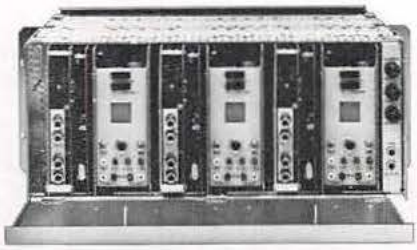
type of transaction are added to each message by the terminal. After the final programmed entry step, the buffered message is automatically transmitted to the computer. The terminal can be connected to a remote printer for capture of hard copy for message verification. *Friden Division Singer Co.*



Data terminals (RA-4)

The 9003A and 9005A data terminals transmit high-speed data over standard PCM repeater line facilities. The 9003A will transmit up to eight 50-kb/s data channels or two 250-kb/s data channels and other combinations. The 9005A will transmit one 50-kb/s channel or one 250-kb/s channel. *Lenkurt Electric Co., Inc.*

Battery chargers (RA-5)

A line of solid-state battery chargers, with both unfiltered and filtered outputs, is specifically designed for "float" service for both nickel cadmium and lead-acid storage batteries, with or without a connected load. The charger adjusts its output current automatically, according to the load and the requirements of the battery. A "high-rate" charge setting, initiated by a manually set timer, allows a discharged battery to be charged rapidly. *Nife Inc.*

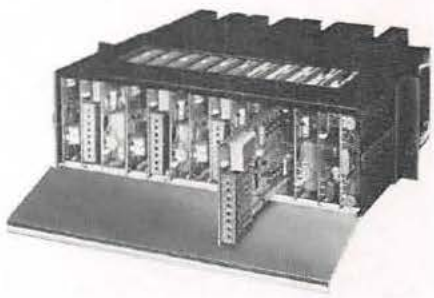
Data generator (RA-6)

Model 520 modem data generator tests both synchronous and asynchronous modems, multiplexers, and digital data transmission systems. Model 520 plugs into the standard EIA connector on the modem. Six patterns selectable by a front panel control are 2047 bit, 511 bit, and 63 bit pseudo-noise sequences and all mark, all space, and alternate mark space (dot pattern). These patterns allow bit-error-rate and bias distortion measurements or adjustments to be made at the receiving modem. When externally timed for synchronous operation, model 520 is capable of DC to half megahertz operation. When internally timed for asynchronous operation, data rates are selectable from 75 through 9600 bits/sec. *International Data Sciences, Inc.*

Data response unit (RA-7)

A data/telegraph response unit will generate four different responses of up to four characters each. A response is generated when one of four input circuits is triggered. The four codes can be ganged to produce two 8-character answers or one 16-character answer.

Other applications of the 411 include indication of conditions at remote locations. Whenever something occurs at the remote station, a code can be triggered into a telegraph line to indicate the station and the event. *Pulse Communications Inc.*



Multiplex equipment (RA-8)

The MC-3001 low-density, all-solid-state SSBSC multiplex equipment provides up to 84 non-synchronized voice channels. Each channel contains a crystal controlled channel oscillator, which permits each channel to operate independently of any common carrier generation equipment.

Identical and interchangeable channel modem cards provide maximum flexibility with minimum spares. A unique vf limiter provided as standard equipment on all channel modems protects against intermodulation, false signaling and accidental high level test tone injection.

All active circuits in the MC-3001 equipment are placed on plug-in cards for optimum flexibility and simplified maintenance or repair. *Motorola Communications & Electronics Inc.*

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People in the News

BOSTON & MAINE.—Hershel E. Ring, general manager, Northeastern Region, **Penn Central,** New Haven, Conn., appointed chief operating officer, B&M, Boston, Mass.

BURLINGTON NORTHERN.—In the intermodal sales division of the marketing department, **C. L. Kath** named manager-tofc/cofc; **K. L. Schramm,** general sales manager-freight forwarder consolidation; **A. G. Hildebrant,** general sales manager-distribution services; **C. E. Mott,** assistant manager-intermodal planning; **J. H. Hutchinson,** assistant manager-intermodal research; **C. J. Paul,** manager-intermodal services; **B. J. Hagstrom,** assistant manager-intermodal research; **J. R. Scalzo,** general sales manager-international trade, Mexico and Atlantic-Gulf ports; **K. P. Wager,** manager-international trade, Pacific Coast ports; **N. D. Brehm,** manager-international trade, Canada and Great Lakes ports. All will have headquarters in St. Paul.

CANADIAN NATIONAL-GRAND TRUNK.—Thomas D. Pace named district sales manager, Cincinnati, succeeding **Robert A. Gifford,** retired.

CHICAGO & NORTH WESTERN.—Markel L. Albrecht, assistant manager of property taxes, appointed manager-property taxes.

CLINCHFIELD.—L. C. Kerns appointed engineer maintenance of way, Erwin, Tenn.

DENVER & RIO GRANDE WESTERN.—J. F. Maloney appointed district manager, Cleveland, Ohio, succeeding **W. M. Dodds,** who retired July 1 after more than 41 years of service.

ERIE LACKAWANNA.—R. E. Fahey, trainmaster, Youngstown, Ohio, appointed assistant superintendent, Marion Division, Marion, Ohio.

FLORIDA EAST COAST.—R. P. Fisher appointed regional manager, sales and service Chicago. **M. W. Ball** appointed district sales representative, Hialeah, Fla.

FRISCO.—James S. Bowie and **Eric A. Cunningham, Jr.** named general attorneys.

Jerry M. Boyer, assistant district sales manager, Oklahoma City, Okla., named district sales manager, Seattle, succeeding **W. R. Keeley,** retired.

J. T. Martin, principal assistant electrical engineer, named superintendent roadway shops, Springfield, Mo., succeeding the late **John McLaggan.**

GRAND TRUNK WESTERN.—Jerome F. Corcoran has been named to the newly created position of manager of budgets and statistics, Detroit. He was formerly regional superintendent of costs, **Chesapeake & Ohio/Baltimore & Ohio,** Richmond, Va.

Jack D. Chase, superintendent of communications, appointed general superintendent, communications and signals, Battle Creek, Mich. **Gordon J. Stonehouse,** signal engineer, Detroit, transferred from the engineering department to Mr. Chase's jurisdiction.

GULF, MOBILE & OHIO.—E. A. Johnson, Jr. appointed assistant general master mechanic, Jackson, Tenn. **Hubert Raines** named master mechanic, St. Louis.

ILLINOIS CENTRAL.—A. Jay Dolby named pollution control engineer. Mr. Dolby was formerly project development engineer, Gary-Ellwood Works, **United States Steel Corp.,** Gary, Ind.

ILLINOIS TERMINAL.—E. L. Parks appointed director of the new Department of Management Information Services, St. Louis, Mo.

KANSAS CITY SOUTHERN.—B. M. Deaver, superintendent of safety and transportation rules examiner, Shreveport, La., appointed chief dispatcher there, to succeed **L. M. Hough,** retired. **D. E. Newburn** replaces Mr. Deaver.

LEHIGH VALLEY.—Edward B. Wren appointed district sales manager, Cleveland, Ohio, succeeding the late **H. H. Bick.**

LOUISVILLE & NASHVILLE.—Gerald L.

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Circle 17 on coupon page 41

Nichols, senior industrial engineer, named manager, industrial engineering, with headquarters remaining at Louisville.

W. T. Dudley, superintendent, Mobile, Ala., transferred to Louisville, to succeed **J. W. Lovell,** retired. Mr. Dudley's successor is **I. L. Bell,** superintendent, Nashville, Tenn., who in turn is succeeded by **J. B. Sellers,** production engineer, Louisville.

MILWAUKEE.—Gary W. Gunder, manager-pricing, named assistant to vice president-traffic.

Nicholas P. Cicinelli, special rate officer, and **William P. Mullen,** assistant manager-pricing, named managers-pricing, Chicago.

MINNESOTA TRANSFER.—W. S. Hammond named superintendent, and **E. F. Manning,** assistant superintendent.

MISSOURI PACIFIC.—Hoyt R. Shelley named assistant freight traffic manager-TOFC, MP, St. Louis. Mr. Shelley retains the title of assistant to president-marketing, **Missouri Pacific Truck Lines, Inc.** and **Texas & Pacific Transport Co.**

NORFOLK & WESTERN.—Aubrey T. Mason, general western traffic manager, San Francisco, appointed assistant vice president—traffic, St. Louis. **Bryant R. Goodall,** traffic manager, Kansas City, succeeds Mr. Mason at San Francisco. **William E. Voltz,** administrative assistant to the merchandise traffic vice president, succeeds Mr. Goodall.

William O. Tracy, Jr., assistant general manager—Pocahontas Region, appointed assistant general manager—quality production, engineering-maintenance of way department, Roanoke.

Duane Fowler, auditor of general accounts, appointed assistant auditor of revenues. **E. F. Lorman,** assistant auditor of general accounts, succeeds Mr. Fowler. **E. E. Wilbourne,** assistant to comptroller, named assistant auditor of general accounts. **R. E. Sink,** internal auditor, appointed general accountant.

David L. Bowman, mechanical inspector, appointed research and test engineer, succeeding **Ralph S. Bryan,** named director-environmental protection. **Ronald E. Wheeler,** foreman gang-locomotive department, succeeds Mr. Bowman.

G. Paul Hill, assistant manager transportation, Western Region, appointed manager automotive transportation—system, with headquarters as before at Detroit.

John A. Barrett, vice president—traffic, Roanoke, retired after 44 years in the railroad industry.

PACIFIC FRUIT EXPRESS.—G. L. Miller appointed superintendent of railroad refrigerator carline operations in the Northwest. Mr. Miller, whose headquarters are in Portland, Ore., succeeds **D. T. Weichlein,** retired.

PENN CENTRAL.—Bert L. Strohl named general manager, Northern Region, Detroit, to succeed **John H. Burdakin,** resigned. Mr. Strohl was formerly general manager, **Indiana Harbor Belt.**

Walter J. Sparks, assistant superintendent, Mohawk-Hudson Division, Utica, N.Y., promoted to superintendent there.

READING.—Sidney R. Spencer, director of governmental and public relations, Philadelphia, has assumed additional governmental duties at the local and state levels formerly handled by **Frank J. Schrey, Jr.,** special agent, retired after more than 47 years of service. **Warren D. Erdman, Jr.,** assistant general claim agent, named general claim agent, succeeding **A. W. Williams,** who has returned to the **Baltimore & Ohio** after completing a temporary four-year assignment.

RICHMOND, FREDERICKSBURG & POTOMAC.—Charles M. Johnson, manager mail and express, appointed manager public affairs, Richmond.

ROCK ISLAND.—Charles V. Adams named assistant director of purchases and stores, Chicago.

SANTA FE.—E. F. Pollard named supervisor of air brakes—general road foreman of engines, Los Angeles, with jurisdiction over Coast Lines.

Milan Govic, district sales manager, Buffalo, N. Y., transferred to New York, to succeed **Edward R. Nelson,** retired. **John J. Powers, Jr.,** district sales manager, Chicago, succeeds Mr. Govic, and in turn is succeeded by **Howard H. Reed.**

J. G. Fry named assistant general manager-engineering, Los Angeles.

SOUTHERN PACIFIC.—Albert Leathem, general electrical supervisor, San Francisco, advanced to assistant electrical engineer-construction there.

Edvil J. Larson, vice president of rates and divisions, San Francisco, retires July 31.

SUPPLY TRADE

Douglas G. K. Wilmot, general manager of international operations, **Castings Division, General Steel Industries, Inc.,** has been promoted to vice president-engineering. **Keith L. Jackson,** assistant chief engineer, **Castings Division,** has been advanced to chief engineer-design of the division. **Leon F. Cummings** has been appointed director of finance, **St. Louis Car Division, GSI.** Mr. Cummings was formerly corporate controller, **Buehler Corp.,** Indianapolis.

FAG Kugelfischer, Georg Schafer & Co. of Schweinfurt West Germany, has announced a change in the name of its United States company from **Norma FAG Bearings Corp.,** to **FAG Bearings Corp.,** Stamford, Conn.

George F. McGlumphy, manager-systems analysis, **Signal & Communications Division, WABCO,** has been promoted to chief engineer—computer systems, Pittsburgh, Pa.

W. W. Sellers has been named vice president, Eastern Region, **Standard Car Truck Co.,** remaining in Philadelphia, Pa.

John L. Snyder has been appointed manager, Marketing and Customer Services department, **Lord Manufacturing Co.,** division of Lord Corp., Erie, Pa. Mr. Snyder formerly was project administrator, **Garrett Corp.,** prior to which he was a sales engineer with **Abex Corp.**

R. R. Baker
Pullman

E. Preston Calvert
Pullman

R. R. Baker has been elected vice president, international sales, and **E. Preston Calvert,** vice president, public relations, **Pullman Incorporated's Transportation Equipment Group.** Messrs. Baker and Calvert were formerly vice presidents of the **Pullman-Standard** and **Trailmobile Divisions.**

Richard D. Johnson has been appointed director of public reations, **Pullman-Standard and Trailmobile divisions, Pullman Incorporated.**

Glen H. Heywood has been named vice president sales, **Jackson Vibrators, Inc.,** Chicago.

Thomas E. Burke has been appointed assistant vice president of sales, and **Robert C. Hardt,** assistant vice president of engineering, **Railweld Division, Holland Co.,** Homewood, Ill.

Lee H. Shils has been named director of engineering and car design, **Thrall Car Manufacturing Co.**

Lewis Bolt & Nut Co., Minneapolis, has appointed **Clawson Railway Supply Co.,** St. Louis, as their representative in the St. Louis and mid-central area.

R. H. Walsh, vice president, **Cleveland Frog & Crossing Co.,** Cleveland, Ohio, has been appointed assistant to the president of **Pettibone Corp.** Mr. Walsh's new responsibilities include development of railroad trackwork and railroad machinery sales for the Chicago-based corporation. Cleveland Frog is a Pettibone subsidiary.

Dale W. Strand has been appointed vice president, National Transportation, at New York, for **Ticketron, Inc.** a subsidiary of **Control Data Corp.** He will be in charge of the planning and marketing of computerized ticketing and reservation services for governmental agencies and organizations. The firm is currently proposing a full ticketing and reservation system for Amtrak. Mr. Strand will also continue to direct Ticketron's Southeastern region.

James R. Higginbottom, assistant eastern railroad sales manager, **Kerite Co.,** New York, has been appointed assistant to the vice president, Railroad Division, reporting to **William A. Edwards,** vice

Richard D. Johnson
Pullman

Glen H. Heywood
Jackson Vibrators

president. **R. H. Woodruff,** sales representative, succeeds Mr. Higginbottom.

Ernie E. Eakins has been appointed a sales representive, **Ellcon National,** Totowa, N.J., succeeding **Stanley W. Clark, Jr.,** transferred to Chicago.

Edward C. Gendron, vice president—finance, **Midland Ross Corp.,** has been promoted to the newly created position of senior vice president, Cleveland. **Allen M. Harrelson** has joined Midland-Ross as senior vice president—finance.

Rohr Corp., Chula Vista, Calif., has completed the acquisition of the Transportation Systems Division of **Varo, Inc.,** Garland, Tex. The division is being acquired for cash and royalties and will be operated as **Monocab, Inc.,** a wholly-owned Rohr subsidiary.

Bruce Hoesly has been appointed national field sales manager, **Van der Horst Corp.,** Kansas City.

Lewis Rail Service Co., Chicago, has been appointed exclusive railroad representative in Chicago, Minneapolis, St. Louis and the general Mid-West area for **Vactor Division, Myers-Sherman Co.**

ACF Industries has closed its Camden, N.J., railroad sales office and consolidated it with the Chicago office. **Robert R. Curtis,** manager of district sales at Camden, continues to service most of his Northeast accounts, including **Trailer Train Co.,** which has moved its offices to Chicago. His remaining accounts are being serviced by ACF's Washington, D.C., district sales office. **Guy D. Larrabee,** manager of district sales, Chicago, continues to service his accounts in the Midwestern states.

Ward H. Speer has been appointed to the newly established position of director—special products, **ACF Industries' Amcar division,** St. Charles, Mo. Mr. Speer was formerly with the electrical division, H. K. Porter Co., Pittsburgh.

CCI Corp. has created a new subsidiary company, **Safetran Systems Corp.,** by combining two CCI subsidiaries, **Marquardt Industrial Products Co.** and **Railroad Accessories Corp. Robert B. Wyland,** CCI vice president, has been appointed president of Safetran. **Harry A. Scott,** president of RACO, and **Mark R. Miller,** president of MIPCO, will continue to serve in their present capacities.

James E. Orr, Jr., has been elected vice president, **Davis Brake Beam Co.,** Johnstown, Pa. **Robert McGahan** has been appointed secretary and treasurer.

Richard C. Clark and **Charles E. Shepherd** have been appointed sales representative, Signal & Communications Division of **WABCO,** at Swissvale, Pa., and Chicago, respectively.

E. H. Lytle has been appointed manager, spare part sales, Transportation Group, **MLW Industries,** Montreal, Quebec, Canada.

David T. Kerr, manager of railroad product sales, Westinghouse Air Brake Division of **WABCO,** has been appointed domestic general sales manager.

James W. Rafferty, sales engineer, **General Railway Signal Co.,** Chicago, has been promoted to district manager, St. Louis office.

TRANSIT

Dewey E. Chester has joined the **Port Authority of Allegheny County,** Pittsburgh, Pa., as manager of community relations—Transit Division. Mr. Chester was previously employed in the public relations department, Ketchum, MacLeod & Grove, Pittsburgh.

DIVIDENDS DECLARED

CHESAPEAKE & OHIO.—$1, quarterly, paid June 21 to holders of record June 1.

GULF, MOBILE & OHIO.—$5, preferred, $1.25, quarterly, payable Dec. 20 to holders of record Nov. 30.

LOUISVILLE & NASHVILLE.—$1, quarterly, paid June 28 to holders of record June 11.

MISSOURI PACIFIC.—Class A, $1.25, quarterly, paid June 30 to holders of record June 18.

NORFOLK & WESTERN.—$1.25, quarterly, paid June 10 to holders of record May 10; $1.25, quarterly, payable Sept. 10 to holders of record Aug. 9.

PITTSBURGH & WEST VIRGINIA.—13½¢, increased, paid June 30 to holders of record June 8.

RICHMOND, FREDERICKSBURG & POTOMAC.—Common, $1.75, quarterly; 6 and 7% guaranteed, $1.75, extra, payable Aug. 2 to holders of record July 15.

ST. LOUIS-SAN FRANCISCO.—60¢, quarterly, paid June 15 to holders of record June 1.

SOUTHERN.—75¢, quarterly, paid June 15 to holders of record May 14; 75¢, quarterly, payable Sept. 15 to holders of record Aug. 13.

SOUTHERN PACIFIC.—50¢, increased, quarterly, paid June 21 to holders of record June 1; 50¢ quarterly, payable Sept. 20 to holders of record Aug. 27.

OBITUARY

Harold M. Sims, 80, retired director of public relations, **Western Railroad Association,** Chicago, died July 26 in Laguna Hills, Calif.

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We'll bet a cigar you don't know about our new baby. It's a single face cotton fiber lube filter with our new patented method of maintaining pleat separation. The total surface filters effectively. Exceptional absorption, cling ability and long life. You know about it? Tell your Wix man—he's got a good cigar for you. Wix Corporation, Gastonia, North Carolina 28052.

WIX

Circle 18 on coupon page 41

AAR sees $2.2 billion cost in track rules

An initial $2.2 billion and annual expenditures of $142 million have been estimated by AAR as the railroads' cost of complying with the Track Safety Standards proposed by the Federal Railroad Administration. Hearings on the new regulations opened in Washington on August 2.

AAR suggested that minimum track safety standards, prepared by its Engineering Division, be the basis for Federal regulation in compliance with the Federal Railroad Safety Act of 1970. FRA standards, said AAR, "would at many points require either substantial expenditures or substantial interference with operations not justified by any safety reason. They are therefore not justified at all, for the jurisdiction of FRA over track extends only to matters of safety."

While FRA requested analysis of the cost/benefit ratio of the new rules, a special Engineering Division task force found time too short for detailed study. Largest items in AAR's estimated initial $2.2 billion cost of complying with the new Standards would be $970 million for rail, $480 million for ties, and $315 million for line and surface. Combined gage, line and surfacing costs of $50 million annually were projected as the largest factor in the recurring $142 million expenditures. Reduction of train accidents attributed to track defects were estimated to save $46 million damage in a year "assuming that compliance with DOT/FRA standards would eliminate all such accidents."

Cost of Implementing Proposed FRA Track Standards

Item	Initial Cost (Millions)	Annual Cost (Millions)
Drainage	$ –	$ 20.0
Vegetation	–	15.0
Ballast	25.0	9.0
Gage	126.0)	50.0
Line & Surface	315.0)	
Ties	480.0	25.0
Rail	970.2	–
Rail Welding & Grinding	–	14.0
Rail Testing	–	8.8
Joint Bars	208.0	–
Tie Plates	80.0	–
TOTAL	$2,204.2	$141.8

Penn Central: "Midway in a crucial year"

One year ago the newly-bankrupt Penn Central was facing up to some of the toughest operating problems in the annals of railroading—and customers were yelping. Today the customers are quieter, in many cases complimentary. Some of the reasons for the change are summed up in Penn Central's mid-year report that was being sent to shippers last week.

Entitled "Midway in a Crucial Year," the report listed these pluses:

—Operating ratio for this year's first six months was 88.2%, a substantial improvement over the 92.6% for the corresponding 1970 period.

—More train miles are now being run, including 12 new regularly scheduled and a total of 46 "run through" trains, at no increase in transportation expenses despite substantial wage and other cost increases.

—New freight-car acquisitions are matching, for the first time in years, retirements. Car maintenance has been stepped up. There is an 8% improvement (over 1970) in car utilization. New Diesels (187) are being acquired and there has been a 23% drop in road diesels out of service since Jan. 1.

—Derailment and other train accident costs for the first five months of 1971 are $9 million less than a year ago. The number of derailments dropped 46%.

—Expensive car float operations in New York harbor has been substantially reduced.

—Over-all employment has been cut by 5,000, including 700 management positions and 1,000 clerical and other support jobs.

—Physical track connections and yard modifications have been made at various points in the system, and steps have been taken to use the potential of the merged system.

—"On-time" performance figures are up substantially. Penn Central was telling its customers last week:

"Single-minded emphasis on producing good transportation has already transformed service dramatically—yet efforts for further improvement will not be relaxed. We will not again risk the loss of the confidence of shippers—the confidence which has been so hard to regain."

Federal takeover for CNJ?

Central Railroad of New Jersey would be at least temporarily acquired by the U. S. government under a reorganization plan filed July 31 by Trustee Robert D. Timpany in a Newark Federal court.

Under the plan, a reorganized CNJ would initially issue its stock to the U.S. Government and the State of New Jersey in settlement of claims owed both.

CNJ now owes:

—$18 million to the U. S. for loans made before it filed for bankruptcy in 1967. These were under Part V of the Interstate Commerce Act, enacted in 1958 and now expired.

—$1.5 million to banks against a $6 million Federally-guaranteed loan made earlier this year under 1970 emergency guarantee legislation.

—$8.3 million to the State of New Jersey for a similar emergency loan this year.

—$5.5 million to C&O/B&O for a number of loans made in recent years.

C&O/B&O controlled CNJ until its bankruptcy through their control of the Reading.

C&O/B&O, according to the plan, would have a 5-year option to reacquire control by purchasing stock in the reorganized CNJ from the U. S. and New Jersey.

Holders of CNJ's $43 million of outstanding 3.25% bonds due in 1987 would be offered new 3.75% bonds maturing 28 years from the effective date of the reorganization plan. The $6 million of defaulted interest on the old bonds would be repaid through issuance to bondholders of 245,470 shares of new common stock with a $25 par value.

Timpany said the reorganization plan was the third step in his program to revive CNJ. The first step, raising cash to continue operations beyond February 1971, was accomplished with a $2-million state grant and a $6-million Federally guaranteed loan. The second was a "blueprint for survival" contemplating shrinkage of the road through extensive abandonments.

BN finds new use for an ore dock

What is an iron-ore dock good for, besides for handling iron ore? For handling coal, Burlington Northern hopes. BN recently moved 5,000 tons of coal over its Allouez ore docks at Superior, Wis., in a "relatively small experimental shipment." Eventually, however, BN may develop a mass movement of low-pollutant western coal over the dock for transshipment by water to electric utilities throughout the Great Lakes region. Says Thomas J. Kryzer, assistant vice president-marketing development for energy, ores and metals: "Western coal can make—already is making—a distinct contribution to environmental protection, and the experiment in utilizing our iron-ore facilities at Superior is another step in the right direction. The rail/water combination offers economies which promise to broaden the market for this low-pollutant energy source." BN is now operating 38 unit coal trains a week, from southern Illinois, North Dakota, Montana and Wyoming. On a ton-mile basis, the road's coal traffic has increased from 3.3 million ton-miles in 1969 to 6.1 billion last year.

Amtrak: Fewer trains, less cash

ICC on July 29 struck a blow at Amtrak's earnings capacity by ruling that Penn Central's 200-series trains in the Philadelphia-New York corridor do not constitute intercity passenger service as defined by Amtrak act.

The 27 trains have a positive cash flow. At a stroke, the ruling removes from Amtrak a sizeable proportion of all its trains, let alone its cash-earning ones.

ICC found them "commuter and shorthaul" and not "intercity rail passenger service" within the meaning Section 102(5) of the Amtrak Act of 1970.

They had been operated by PC under contract to Amtrak since May 1. When PC sought to discontinue them back in March of this year prior to Amtrak's startup, the Commonwealth of Pennsylvania and other local authorities protested to PC's Federal bankruptcy court, which sent the matter to ICC for decision.

Amtrak officers made no comment on the decision, but a dissenter to the ICC decision, Commissioner Kenneth H. Tuggle noted that commuter tickets represented 53.2% of the riders on the 200-series trains in 1970, while through riders produced 70.8% of revenues.

Watching Washington

REID BEDDOW

MUCH ADO

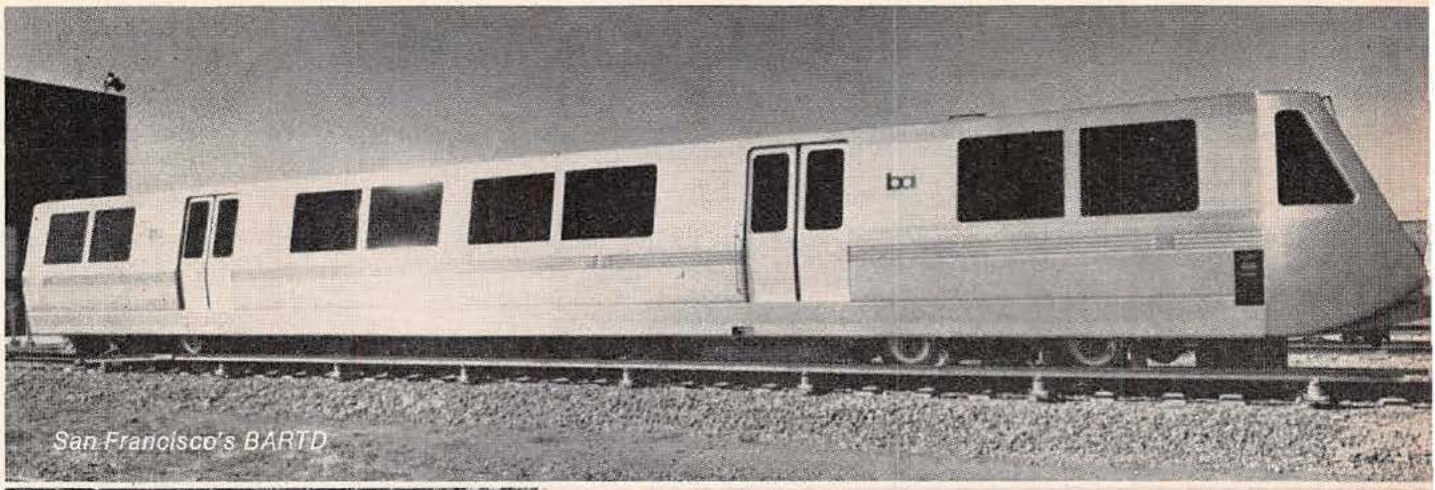
The Senate Surface Transportation Subcommittee's hearings on Penn Central July 27-28 were perhaps more remarkable for what did not happen than what did. DOT did not unwrap there its regulatory and rail-aid package. DOT Under Secretary James A. Beggs, the leadoff witness, seemed almost apologetic that he wasn't undoing the ribbons. Mr. Beggs, with customary precision and command of fact, then proceeded to read a seven-page statement on Penn Central earnings and prospect which contained few surprises (among them: DOT will retain an accounting firm, Arthur Henderson & Co., to review PC projections). Afterwards, Subcommittee Chairman Vance Hartke said, "Well, all that's not very original. . . . Anyone who reads newspapers can figure that out, and he's not charged by Congress with administering the Emergency Rail Services Act of 1970." The two began to debate a non-question: Is Penn Central necessary? The correspondent of one daily newspaper fell asleep.

At times it appeared the hearings had more to do with Lockheed than with PC; and, sure enough, Senator Hartke on July 29 delivered a floor speech seeking to prove that government-guaranteed loans to rails showed the futility of such loans. His point: of the $224 million in Federally-guaranteed loans to rails made under an expired 1958 law, $165.3 million is still outstanding, much of it in default. (The Lockheed aid bill was finally approved, by a vote of 49-48, on Aug. 2.)

Also Senator Hartke wanted to know of Mr. Beggs how the bankrupt PC could afford to pay $300,000 a day in indemnity payments to struck railroads, a statistic which caught Mr. Beggs for once at a loss. The exact figure, $273,459 a day for every day of the strike, was confirmed next day by PC Trustee Willard Wirtz, who delivered the hearings' best *mot*: "Bankruptcy is hell, but if the question is whether it has a sobering effect the answer is yes."

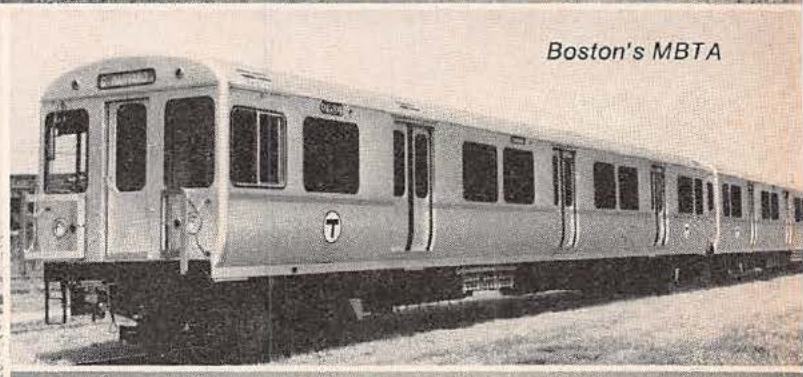
PENN CENTRAL AT BREAK EVEN BY 1973?

In their prepared testimony for Senator Hartke's subcommittee, Penn Central's trustees listed a number of operational improvements achieved during the first half of 1970—a list which PC subsequently incorporated into a special report to shippers (see p. 44B). The trustees emphasized however, that sweeping work-rules reform was a prerequisite to viability. They told Hartke that "if the excess costs involved in preserving outdated work rules are eliminated, there is a reasonable prospect of Penn Central's coming close to the break-even point (on a non-bankruptcy basis, assuming payment of current taxes and debt charges) by 1973"—a somewhat more optimistic forecast than a previous estimate that this could be accomplished "by 1973 to 1975." The trustees' submitted their statement five days before a national agreement was reached with the United Transportation Union on wages and working rules. How far that agreement would go toward meeting PC's definition of fundamental reforms was still to be determined last week.

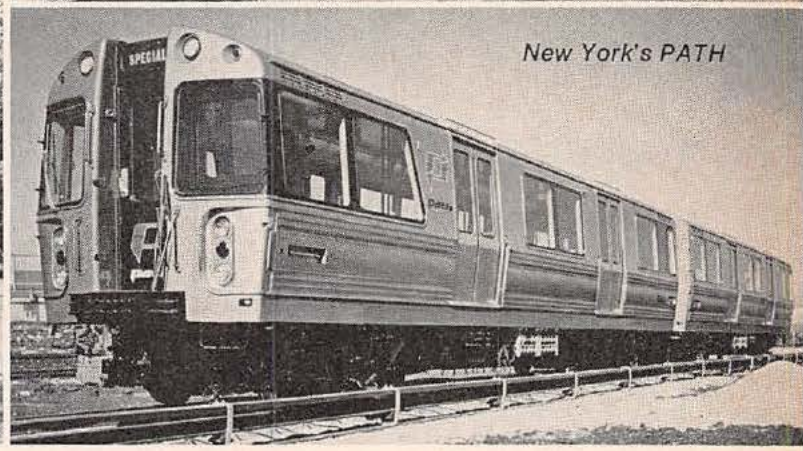


San Francisco's BARTD

Prototype of Washington's Metro car



Boston's MBTA



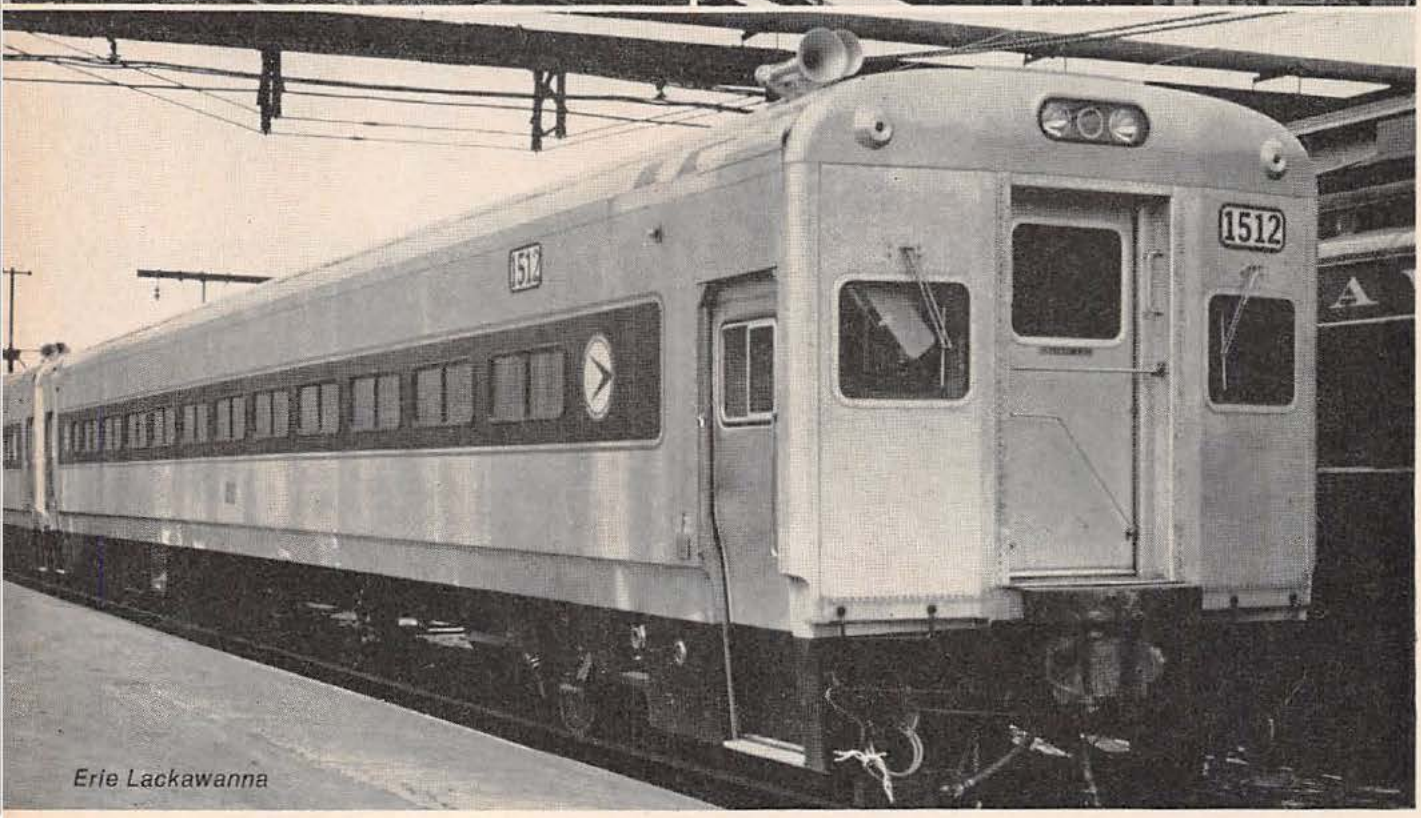
New York's PATH

There are seven good reasons for aluminum transit cars.

Any one of them is reason enough.

United Aircraft's Turbo-train

Transit Expressway Demonstration Project



Erie Lackawanna

Light weight, durability, beauty, corrosion resistance, low-cost maintenance, safety and 66 years of Alcoa experience in transportation. There may be other reasons, but they hardly seem necessary. The most recent rapid-transit projects have appreciated the advantages of aluminum: New York's PATH, Boston's MBTA, San Francisco's BARTD, Erie Lackawanna, Transit Expressway Demonstration Project, United Aircraft's Turbo-train and the prototype of Washington's Metro car. All have chosen Alcoa® aluminum for one good reason or another.

In planning and/or designing for rapid transit, think in terms of Alcoa aluminum. It gives you a lower cost initially, a greater range of finishes and forms with which to work, and it reduces maintenance costs. Taking advantage of aluminum's light weight will mean lower operating costs, as well as less wear on brakes, wheels, bearings, rails and roadbeds.

And with aluminum, you no longer have to be concerned with either corrosion or painting. One of the most attractive finishes you can get for your cars is bare brushed aluminum. For more information, contact your Alcoa sales office.

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Illinois Central

Erie Lackawanna

Coach and Car is the OLDEST railroad seat manufacturer in America. For almost half a century it has maintained a consistent high level of solid construction, contemporary design, and fair pricing. We have the know-how acquired through solid experience and plan to use it to serve the railroad systems of America for the next half century.

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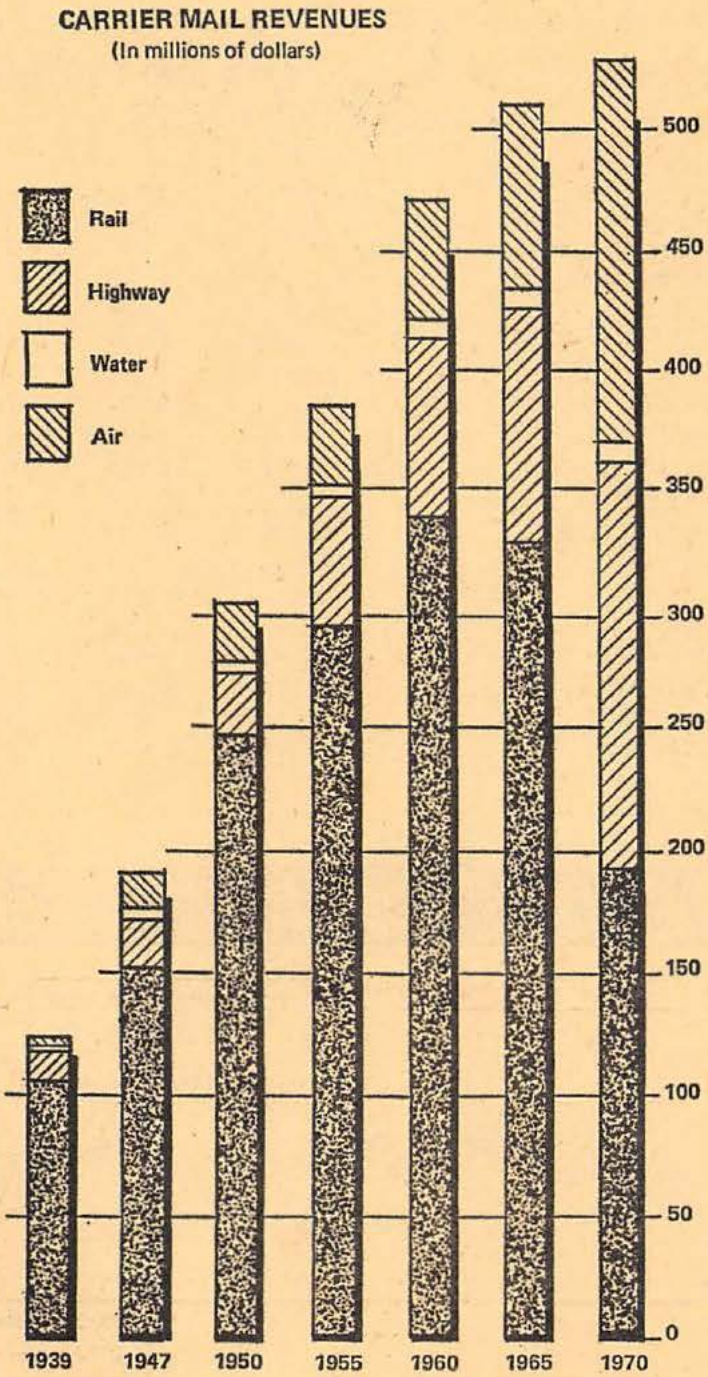
POST OFFICE PAYMENTS TO U.S. CARRIERS FOR TRANSPORT OF DOMESTIC MAIL (Millions of dollars)			
	1950	1960	1970
RAIL	245.8	341.3	184.8
HIGHWAY	33.1	76.6	173.0
WATER	2.6	3.7	5.0
AIR	24.0	49.1	165.0

Source: Transportation Association of America



● *Orders and deliveries.*—Orders were placed for 8,521 freight cars in June, compared with 6,670 in the preceding month and 5,218 in June 1970. New cars on order and undelivered on July 1 totaled 27,977, compared with 24,944 on June 1 and 30,149 on July 1, 1970.

FREIGHT TRAIN CARS ORDERED AND DELIVERED AND BACKLOG OF ORDERS

DELIVERED

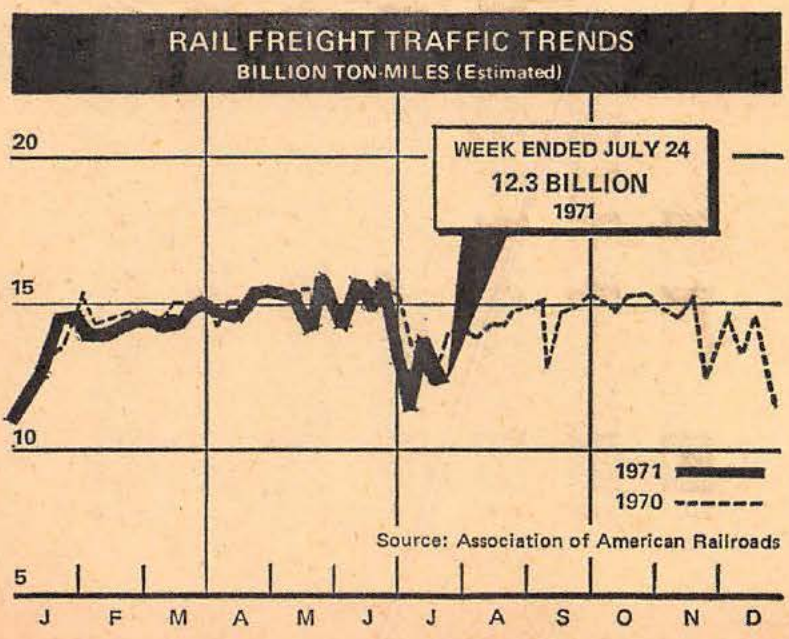
	June 1971	May 1971	June 1970
Built new by carbuilders	4,205	4,381	4,478
Built new in R.R. shops	1,196	871	1,637
Built new—total	5,401	5,252	6,115
Rebuilt	429	213	721
TOTAL DELIVERED	**5,830**	**5,465**	**6,836**

ORDERED

To be built new by carbuilders	6,321	6,570	3,487
To be built new in R.R. shops	2,200	100	1,731
To be built new—total	8,521	6,670	5,218
To be rebuilt	860	50	127
TOTAL ORDERED	**9,381**	**6,720**	**5,345**

ON ORDER AND UNDELIVERED

	July 1, 1971	June 1, 1971	July 1, 1970
To be built new by carbuilders	23,256	21,227	23,308
To be built new in R.R. shops	4,721	3,717	6,841
To be built new—total	27,977	24,944	30,149
To be rebuilt	3,231	2,800	6,353
TOTAL ON ORDER	**31,208**	**27,744**	**36,502**



Market Outlook

CARLOADINGS

Loadings of revenue freight in the week ended July 24 (during which several railroads were struck by the United Transportation Union) totaled 429,428 cars, according to the Association of American Railroads. This was a decrease of 17.5%, compared with the corresponding week last year. Ton-miles generated by carloadings in the week ended July 24 are estimated at 12.3 billion, a decrease of 15.1% below the corresponding week of 1970.

REVENUE FREIGHT CARLOADINGS

Commodity	July 24 week	July 17 week
Grain	26,826	29,692
Farm products	9,525	10,783
Metallic ores	47,099	42,851
Coal	68,699	84,745
Crushed stone, gravel & Sand	26,643	31,176
Nonmetallic minerals	8,054	9,666
Grain mill products	15,789	18,092
Food & kindred products	19,818	22,926
Primary forest products	21,086	23,738
Lumber & wood products (except furniture)	14,055	15,072
Pulp, paper & allied products	19,944	20,519
Chemicals & allied products	19,928	23,639
Petroleum products	8,484	8,867
Stone, clay & glass products	16,340	20,842
Coke	6,051	6,725
Metals & products	22,388	24,285
Motor vehicles & equipment	10,597	16,533
Waste & scrap materials	11,130	13,066
Forwarder & shipper assn. traffic	4,982	5,946
All other carloads	51,634	57,612
LCL traffic	396	518
Total cars loaded	429,428	487,293

CUMULATIVE TOTAL, 30 weeks	1971	1970	1969
	14,958,064	15,612,064	15,885,426
Estimated revenue ton-miles (billions) 30 weeks	431.5	439.4	434.6

PIGGYBACK LOADINGS

U.S. piggyback loadings for the week ended July 17 totaled 24,133 cars (12.6% below the corresponding week last year) and 38,434 trailers or containers (down 12.6% from 1970). Cumulative volume for the first 29 weeks of 1971 is 743,130 cars (off 7.3% from last year) and 1,194,105 trailers or containers (down 7.3% from 1970).

IN CANADA

7 days ending	Tons of Revenue Freight	Cumulative Totals
July 14, 1971	4,628,734	108,358,912
July 14, 1970	4,125,175	105,364,675

LOCOMOTIVES

● *Lehigh Valley.*—Will acquire four new 2,000-hp, four-axle, GP38AC diesel locomotives from EMD at a total cost of $909,-160. John F. Nash, trustee and chief operating officer of the line, said the new units will replace locomotives which are more than 21 years old. Delivery is scheduled for early fall.

● *Penn Central.*—Will acquire 50 new 1,500-hp diesel-electric locomotives under a leasing agreement with Xtra, Inc., which will purchase them from EMD. The lease will be for 20 years, with options to renew for two additional five-year terms. The locomotives will be used in local and branch line serivice and for yard switching. Delivery is to take place during the March-July 1972 period. Earlier this year Penn Central arranged to lease 137 diesels. In adition, 556 diesels were given heavy repairs during this year's first six months.

FOREIGN

● *Brazil.*—Placed a $34-million order with General Electric for the supply of 80 U23C, 2250-hp diesel electric locomotives, to be built by GE's Brazilian affiliate, General Electric S.A., using U.S. components. Rede Ferroviaria Federal will use the locomotives for transporting iron ore from the Aguas Claras deposits in Minas Gerais to the Sepetiba ore terminal in the state of Rio de Janeiro.

● *Spain.*—Will use proceeds of a $90-million World Bank loan for acquisition of new locomotives and rolling stock; track, station and yard improvements; and communications and signaling modernization.

● *Yugoslavia.*—Will acquire 20 2600-hp diesel-electric locomotives from MLW-Industries, a division of MLW-Worthington Limited, Montreal, through a leasing arrangement. Under an agreement with Canada's Export Development Corporation, the Bank of Montreal (Bahamas and Caribbean) Limited is loaning $7.5 million to cover the lease. The loan covers 90% of the value of the lease of the locomotives, spare parts and related costs. The locomotives will be used by the Belgrade Division of Zeljeznicko Transportno Preduzece. The contract represents the first supply of locomotives by MLW to Europe.

FREIGHT-TRAIN CARS

● *Canadian National.*—Placed a $5-million order with National Steel Car Corp. for 150 89-ft, 4-in., 70-ton, tri-level automobile cars. Delivery will begin in November and be completed in January 1972.

Viewpoint

The 12 years' war—and who really won it

"I am not attacking railroad labor. There is no more able or conscientious work force in any industry in the nation. I am, however, attacking and condemning the deadly rules our workers must work by . . . rules which are thoroughly un-American in concept and economically destructive in practice."

These words, spoken by then-AAR President Daniel P. Loomis in St. Louis early in February 1959, amounted to a declaration of war —a war against "wasteful and burdensome work rules which hang like an economic albatross around the neck of American progress."

Actually, the first shot had been fired nearly a year earlier with the publication, in Railway Age, of the first thoroughly-documented report on railroad "featherbedding"—an explosive subject which railroad management had fumed over for years behind closed doors, but which was thought to be too hot to handle. But Railway Age did decide to handle it. After three months of research and documentation, we published our "Trap" issue of March 24, 1958.

We tried to make these points:

"Both railroads and their employees are caught in a trap—and they can't stay in it much longer. . .

"If make-work efforts were effective, the railroads would have to be hiring more employees. Instead, they have fewer and fewer. . ."

We asked: "Is this an insoluble problem? Or do railroads and their employees have enough good will and good sense to work the problem out between them?"

And we advised: "Be patient but persistent. Rules built up over a century can't be changed overnight, but now is the time to begin."

It was 11 months later that the AAR—using Railway Age's arsenal of documentation—trained its own guns on "make-work."

Twelve bitter years later, the war, if not over, has come to a significant point of truce. Neither side can claim a clear-cut decision; but important goals have been achieved toward rationalizing working practices. The relevant documents are described by Senior Editor Gus Welty in a four-page special report beginning on page 13.

TIME NOW TO UNITE FOR A BIGGER BATTLE

Who will come out the victors as the work-rule reforms which *have* been won are implemented? The railroad presidents? The brotherhood chiefs?

Not really. The winners will be the rank-and-file railroaders across the land whose jobs and whose futures are more secure today than they were a week ago—because their industry has finally come to grips with an internal problem that was tearing it apart.

Dan Loomis said 12 years ago:

"Let's stop arguing over who will get the biggest share of a reeling industry's dwindling income. . . and turn our eyes and hearts in ways to regain strength, expand business and divide the fruits of newfound prosperity."

That advice was never more apropos than it is today.

Having stopped marching on each other, can the railroads and their employees now march together on Washington?

British APT: Revenue runs by 1974

Britain's move into the age of super-speed rail travel came a little closer recently as British Railways at last took the wraps off the nearly completed experimental Advanced Passenger Train (APT). Revenue operation is still a long way off—late 1974 at earliest.

At this moment, claims BR's head of engineering and research, Dr. Sydney Jones, "the APT is in advance of any other train—or guided surface vehicle—in the world." The APT's unique suspension system and associated tilting mechanism will permit the train to run on ordinary track at speeds up to 150 mph.

Two years ago BR sold North American design and development rights for the APT to a U.S. consortium headed by Budd. Now several European railways have begun to nibble at the BR bait.

● **Two versions.** There will be two versions of the APT—one for electric operation, the other powered by four Leyland gas turbine engines. The experimental train (APT-E) is the gas-turbine version.

Once the bugs have been eliminated from the APT-E, two prototypes will be built—one gas turbine, the other electric. These will be the first to go into trial revenue service. Full commercial service is not expected before late 1975.

APT-E is likely to have one of the most exhaustive test programs ever devised for a new train. Preliminary testing of components has been going on for some time at the Derby Laboratories, where BR's whiz-kid scientists and engineers have been working on the project for more than two years.

Most of the test program will be carried out on a specially prepared 13-mile test track on the former Nottingham-Kettering main line. It provides all the route conditions—gradients, curves, tunnels and junctions—likely to be found anywhere on BR main lines. And there is a 3-mile straight section where the E train will be able to roar up to its design maximum of 155 mph.

Explaining the novel design features of the new train, the project's design chief Alan Wickens said the train's high speed capability was due to successful development in truck and suspension design. These were achieved at Derby by close study of vehicle riding and behaviour at high speed.

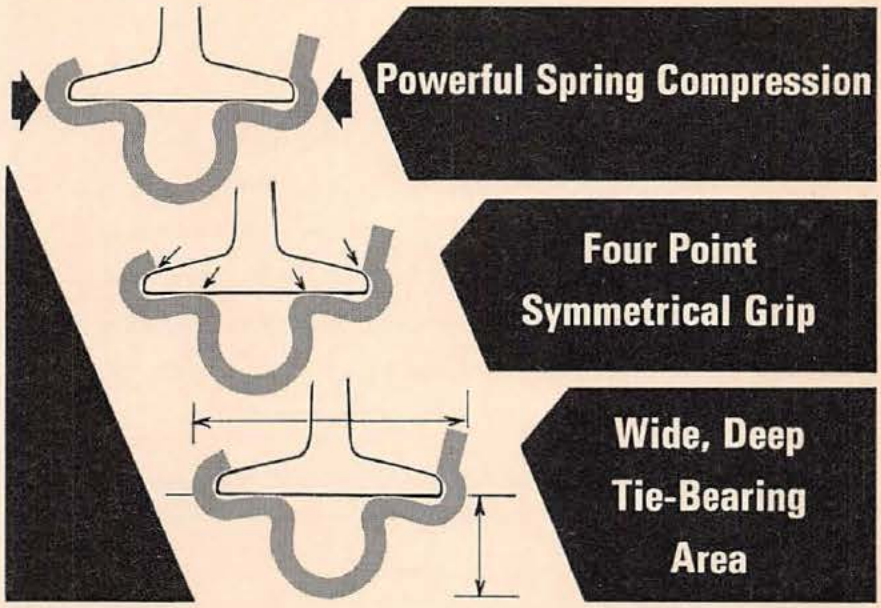
Negotiation of curves at high speed without flange contact reduces dynamic stresses and wear on the track and improves the quality of the ride.

Incorporated in the truck is an electro-hydraulic/pneumatic tilt suspension. Sensors measure the transverse acceleration parallel to the floor, and cause the suspension to tilt the car body up to 9 degrees relative to the track about a longitudinal axis.

By tilting the vehicle it becomes unnecessary to make extensive—and expensive—modifications to track curves. And speeds through curves can be 50% greater than with existing conventional cars.

● **Two years' work.** Present stage of development at Derby, right on schedule, represents two years' work of some of the best brains of the world's railroad and aerospace industries.

When the trains are introduced in 1975, they will take over entire services, and will lead to big changes in the timetables. As much as two hours could be slashed off the London-Edinburgh journey, for instance.



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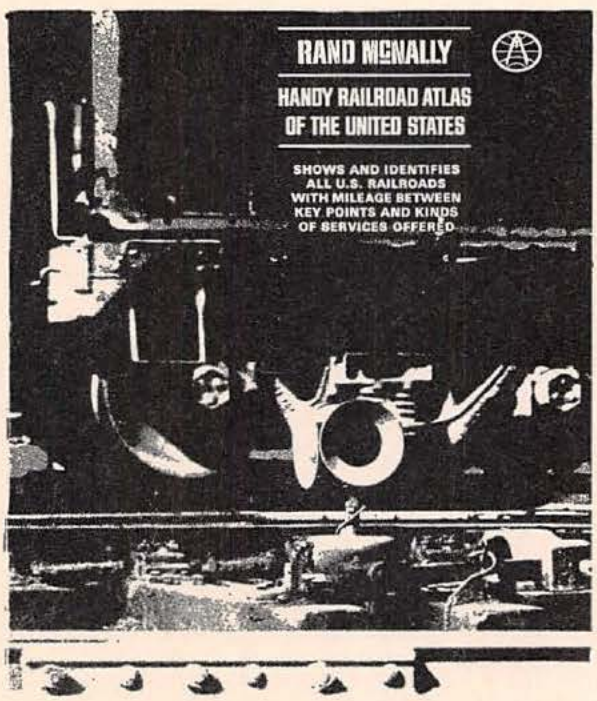

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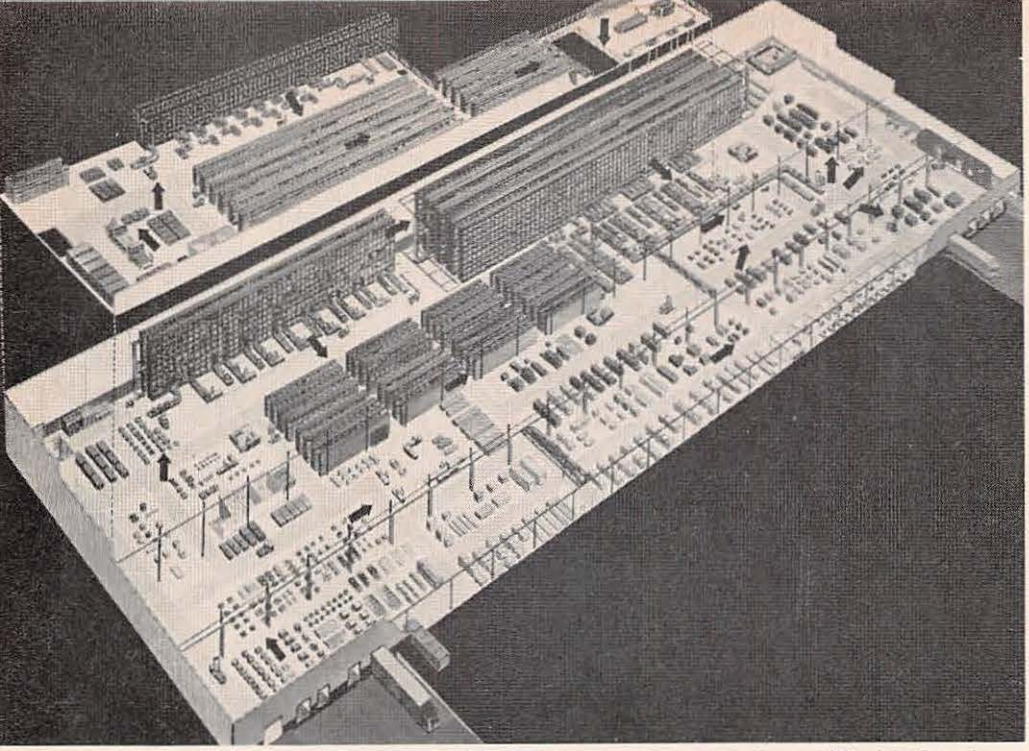


WAREHOUSE/DISTRIBUTION CENTER has storage areas for multitude of parts required for operation of today's locomotives and transit cars.

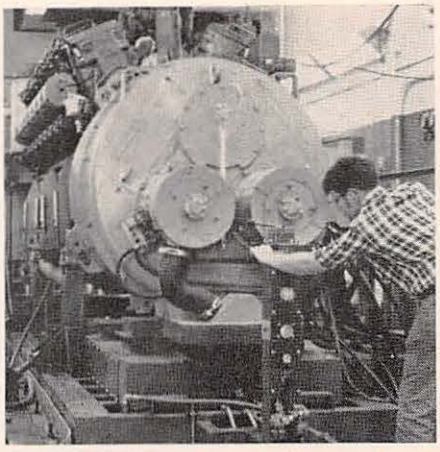
GE aims to improve customer services

Over a quarter million square feet of new production and warehousing space and an investment in excess of $10 million are represented in General Electric's latest steps to better serve its railroad and transit customers.

The new 150,000-square-foot, $4.5 million Warehouse/distribution Center at Erie, Pa., is now the hub of GE's Transportation Renewal Parts Operation. "Our business has just outgrown its original facilities," explains Norman W. Seip, general manager of transportation industry sales, pointing to the 23,000 different locomotive, commuter car and transit car parts which are always in stock.

Some 75 miles south of Erie at Grove City, Pa., GE has established a new Diesel Engine Remanufacturing Facility to meet the specialized needs of its locomotive customers. This prime-mover shop has the special tools and quality control techniques to meet the demand which naturally grows as the number of GE diesel engines in service increases.

● **Special problems.** GE, which built the first electric locomotive well before the turn of the century, has always been concerned with the after-sale service of its transportation products. And the extended life of railroad and transit rolling stock has required a long-term parts support which differs from that for typical manufacturing industries.



ENGINE SHOP has test cells where completed diesels are load tested.

The new central warehouse of Transportation Renewal Parts Operation (TRPO) serves as the primary staging area for GE regional warehouses at Erie (a separate operation), St. Louis, Minneapolis, Atlanta and Los Angeles. Construction of the new shop in which GE will build complete transit cars (RA, Feb. 14, p. 14) made necessary the relocation of the TRPO facilities at Erie. It was then decided to go all the way—providing space for future growth and assuring faster response time on customers' orders primarily because of a computer-oriented stocking and order processing system.

Scheduled for full operation this month, the new Center features four 50-foot-wide storage bays each 580 feet long and has enclosed rail and truck shipping docks. It is marked by the straight-line flow from receiving areas through storage to the staging and shipping operations.

Cube utilization and productivity of the facility are to be steadily increased as computer-controlled stacker cranes are installed. When an order is received, the computer will locate the parts in seconds, assuring speedy retrieval. All this will involve a much closer relationship between the computer and the physical handling of parts. Although ordinary handling will be highly automated, it will be possible for the system to be interrupted to expedite parts delivery in an emergency situation.

● **Remanufacturing.** The new diesel facility at Grove City marks the separation of GE's new engine production and its remanufacturing operation. This has been important, according to E. N. DuVault, general manager of the Diesel Engine Products Department, since two different disciplines are involved.

In addition to the remanufacturing of complete engines, the new shop will do the repair and return of engine components, such as power assemblies, work which until now has been done at Erie and St. Louis.

The 100,000-square-foot shop has been tooled for the cleaning, inspection, restoration, assembly and testing of engine components. It has an assembly area for the complete diesels and test cells with the same equipment used for new engines at Erie. The remanufactured engines are put through the same test cycle and are warranted as new engines. The Grove City plant is aiming to have the capacity for turning out one engine per day by year's end.

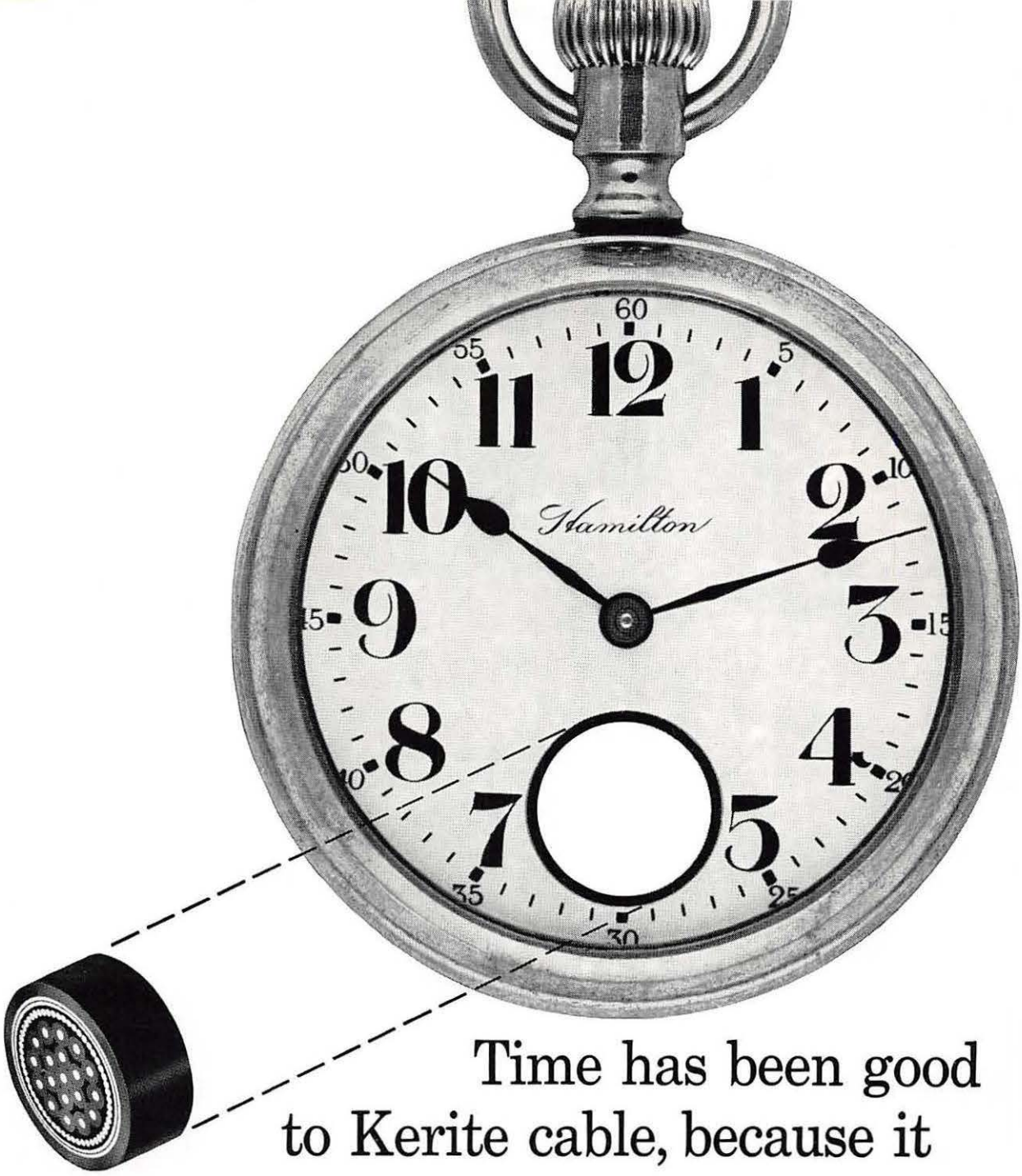
GE will now offer three options on engines and components:

—Unit exchange for parts and complete engines, both bearing GE warranties;

—Repair and return, an operation involving the customer's own engine or parts remanufactured to the same standards as unit exchange but requiring some time lag while the work is accomodated on GE's production lines;

—Limited repair and return which calls only for specific work as detailed by the customer.

The Grove City plant is on a Bessemer & Lake Erie siding which will make it possible for complete locomotives to be moved in for unit exchange of engines or for so called "top deck" overhauls, a process which until now has had to be done in railroad shops. ■



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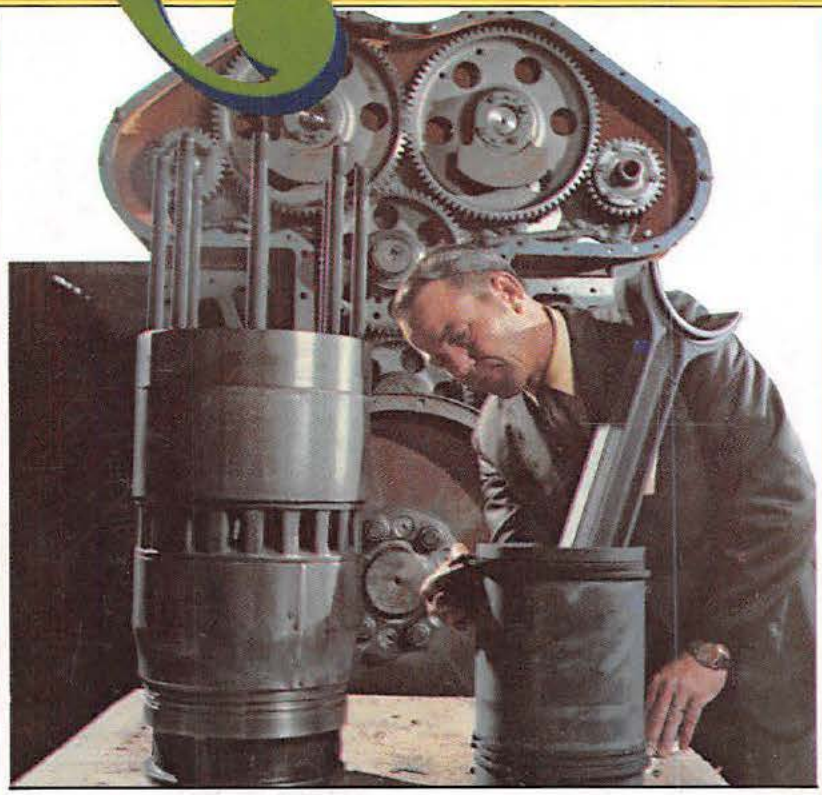

Pistons and rings give longer service when lubricated with CITGO RD-836 Diesel Engine Oil

New, improved railroad lubricants under development at mile-long Cities Service research center

Cities Service Oil Company maintains an aggressive and continuing research and development program at the Cities Service Research Center complex near Princeton, New Jersey. Improved products for railroad applications, both on track and off, are under constant development and testing. Within the past two years alone, superior lubricants have been introduced for a number of different applications. In

many cases, these advanced railroad lubes have taken the place of two or more previous products and thus served to shorten the list of "required" lubricants in customers' inventories.

For information on specific products now under development and available for test application programs, drop a line to L. M. Fleming, Transportation, Sales Department, Cities Service Oil Company, Box 300, Tulsa, Oklahoma 74102.

The promise of pulling more tonnage with fewer units and a resultant decrease in maintenance costs has remained little more than a promise in many cases. Higher horsepower diesel engines place greater demands on the crankcase oil and on those moving parts whose life depends on effective lubrication. Conventional high dispersant diesel lube oils just couldn't handle the load. Something better had to be developed.

That something better turned out to be CITGO RD-836, specifically formulated to get the maximum usage from each new high horsepower engine. RD-836 withstands more heat for longer periods; neutralizes greater amounts of acid; keeps oil filters and engine surfaces cleaner. Wear is reduced and oil life is significantly extended, resulting in less downtime and lower maintenance costs. Thirteen major railroads are now using CITGO RD-836. In case after case, examination of pistons, rings and cylinders following thousands of hours of operation shows virtually no wear.

Oustanding reserve alkalinity and stability

Among the properties which enhance the performance capabilities of CITGO RD-836 diesel engine oil include excellent reserve alkalinity for extended TBN retention, very fine compatibility with other approved diesel engine oils and unusual stability, which helps eliminate clutch slippage.

In addition to these qualities, RD-836 also possesses exceptional anti-rust and anti-foam properties provided by special components in the additive package. The superior grade medium VI base stocks contribute exceptional oxidation stability and anti-wear protection along with good silver lubricity.

Dispersant, detergent keep engine parts clean, filters free-flowing.

An ashless dispersant and a detergent additive are key ingredients in CITGO RD-836 diesel engine oil. Designed to provide both longer service intervals and extended filter life, its high dispersancy permits the

oil to flow readily through filter elements with a minimum of filter and oil cooler plugging. This is particularly important in the lubrication of engines equipped with by-pass valves, where particles in the unfiltered oil could otherwise settle out and cause abrasive damage to bearings.

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